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EXCAVATIONS AT SATANIKOTA

1977-80

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By
N. C. GHOSH

सत्यमेव जयते

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1986

MEMOIRS OF THE
ARCHAEOLOGICAL SURVEY OF INDIA

No. 82

EXCAVATIONS AT SATANIKOTA
1977-80

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ARCHAEOLOGICAL SURVEY OF INDIA

1986

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FOREWORD

Rapid development and industrialisation in independent India necessarily has included many irrigation projects. In the early 1950's, the famous Nagarjuna Sagar project, involved submergence of several villages and towns. Just as rehabilitation of the people from the submergence was essential, Government considered the rehabilitation of the cultural property equally necessary. We have, therefore, today the famous Nagarjunakonda island in the Nagarjuna Sagar lake, where the famous Buddhist remains have been bodily transplanted and rehabilitated. Nagarjunakonda is an idyllic spot, a tourists' paradise, with an excellent archaeological museum.

Similar exercise is on, from the submergence area of the Hydro-electric Project at Srisailam, about 100 kms. upstream from Nagarjuna Sagar. Archaeological Survey of India, in collaboration with the Department of Archaeology and Museums, Andhra Pradesh, is engaged in the task of rehabilitating the cultural heritage of the area. Several temples belonging to the period of early Chalukyas, Rashtrakutas and later Chalukyas have already been transplanted to safer places. Many more in the process of being transplanted.

Another aspect of the transplantation of the cultural property, is to record the cultural history of the submergance area. The area contained many valuable evidence of the man's development from savagery to civilization. This data could only be retrieved from scientific excavations of prehistoric and historic sites, in the submergence area. The present report of excavations at the ancient site of Satanikota carried out from 1977 to 1980, embodies the documentation carried out by the Excavations Branch of the Archaeological Survey of India. The excavations have revealed evidence of human habitation from lower palaeolithic culture to the late medieval period. It is hoped that the results of this detailed investigation contained in this volume will be welcomed by Scholars and Researchers in Archaeology.

We are grateful to Sri N. C. Ghosh and his team of archaeologists for having fulfilled the obligation of preparing the report for publications. Since 1985, Archaeological Survey has taken up in right earnest to clear the backlog of pending reports on excavations. We have already published Lothal Volume II. We are happy to present this Second Volume, on the excavations at Satanikota.

M. S. NAGARAJA RAO
Director General

20.1.1986

CONTENTS

			PAGE
CHAPTER	I	INTRODUCTION	1
		A. Objectives of the work and Planning	1
		B. Previous Work	3
		C. Acknowledgement	6-7
CHAPTER	II	THE SITE, ITS ENVIRONS AND BRIEF HISTORY	8
CHAPTER	III	STONE AGE	20
		A. Stratigraphy	20
		(i) Sediment Deposition	21
		(ii) Morphometric Gravel Analysis (Area J & P combined) (With M. U. Qureshi)	21
		(iii) Discussion	22
		(iv) Excavation	23
		B. Middle Palaeolithic Culture	26
		(i) General Observation	26
		(ii) Tool Types (with S. K. Mitra)	26
		C. Mesolithic Culture	33
		(i) General Observation	33
		(ii) Tool Types (with S. K. Mitra)	33
CHAPTER	IV	MEGALITHIC CULTURE	40
		A. Introduction	40
		B. Classification	41
		C. Description of the Excavated Tombs	42
		D. Skeletal Remains (Anadi Pal)	51
		E. Pottery from the Burials (with D. K. Ambastha)	60
		F. Other Finds (with K. Ismail)	74
		(i) Metal Objects	74
		(ii) Bangles	74
		(iii) Miscellaneous Objects	76
		G. Chronology (with K. Ismail)	76
CHAPTER	V	EARLY HISTORICAL (PERIOD II) AND MEDIEVAL (PERIOD III) PERIOD ..	78
		A. Cultural Sequence and Main Characteristics of Different Periods ..	78
		B. Chronology	79
		C. Cuttings	82
		(i) SKT-1	82
		1. The cutting presenting the Stone Age	84
		2. Early Historical Period	84
		3. Medieval	86
		(ii) STK-2	88
		(iii) STK-3	88
		(iv) STK-4	90

PAGE

(v) STK-5 90
(vi) STK-6 90
(vii) STK-7 92
(viii) STK-8 92
(ix) STK-9 93
(x) STK-10 93
(xi) STK-11 93
(xii) STK-12 94
(xiii) STK-13 94

D. Defence, Structures and Building Material 95
1. Defence 95
2. Important Structures 97

E. Pottery (With P. R. K. Prasad and D. K. Ambastha) 102
(a) Introduction 102
(b) Period II 103
(i) Russet Coated Painted Ware 103
(ii) Rouletted Ware 107
(iii) Red Polished Ware and Kaolin Wares 113
(a) Red Polished Ware 113
(b) Kaolin Ware 113
(iv) Black-and-Red Ware 115
(v) Other Wares 120
(a) Red Ware 120
(b) Chocolate Ware 121
(c) Black Ware 121
(d) Grey Ware 121
(e) Decorated sherds 121

(c) Period III (Medieval Pottery) 143
Pottery—Appendix I (With H. N. Singh) 150
Introduction 150
X-ray analysis 150
Conclusion 151
Observation 151

CHAPTER VI OTHER FINDS (WITH H. P. SINGH) 153

A. Stone Objects 153
(a) Sculptures 153
(b) Legged Querns 153
(c) Mullers 154
(d) Stone Balls 155

B. Terracotta Objects 155
(a) Human and Animal Figurines 155
(b) Cart Wheels 156
(c) Votive Objects 156
(d) Lamps 157
(e) Crucibles 157
(f) Ear Ornaments 157

PAGE

	(g) Hopscotches	158
	(h) Spindle Whorls	158
	(i) Play things	158
	(j) Miscellaneous	158
C.	Metal Objects	159
	(a) Iron Objects	159
	(b) Copper Objects	160
D.	Bone and Ivory Objects	160
E.	Bangles and Rings	161
F.	Beads	165
G.	Coins (With Ajay Mitra Sastri and K. Ismail)	174

DESCRIPTION OF FIGURES

		Page
Fig. 1.	: Map showing the Principal sites mentioned in the report	2
Fig. 2.	: Sketch map of Satanikota village showing the landmarks	4
Fig. 3A.	: Rolled specimen of Lower Palaeolithic tool	9
Fig. 3B.	: Neolithic tools	11
Fig. 4.	: Section across HLG. on the right bank of the River Tungabhadra (In between)	22 & 23
Fig. 5.	: Section of HLG.-7	25
Fig. 6.	: Middle Palaeolithic tools	28
Fig. 7.	: Middle Palaeolithic tools	31
Fig. 8.	: Middle tools	34
Fig. 9.	: Mesolithic tools	36
Fig. 10.	: Distribution pattern of Megaliths at Satanikota (In between)	38 & 39
Fig. 11.	: Plan and Section of Meg. (In between)	40 & 41
Fig. 12.	: Plan and Section of Meg. AII	44
Fig. 13.	: Sarcophagi sherds in the Cists of Meg. AII and Meg. AIII	45
Fig. 14.	: Plan and Section of Meg. AII	47
Fig. 15.	: Plan and Section of Meg. BXVII	48
Fig. 16.	: Plan of Meg. CI (In between)	48 & 49
Fig. 17.	: Section of Meg. CI (In between)	50 & 51
Fig. 18.	: Plan of Meg. BI (In between)	52 & 53
Fig. 19.	: Section of Meg. BI (In between)	54 & 55
Fig. 20.	: Plan and Section BVIII	55
Fig. 21.	: Pottery from Meg. AI. Pottery from Meg. BXVII	62
Fig. 22.	: Pottery from Meg. AII	64
Fig. 23.	: Pottery from Meg. AIII	67
Fig. 24.	: Pottery from Meg. AII and AIII	69
Fig. 25.	: Pottery from Meg. CI	71
Fig. 26.	: Pottery from Meg. BI	73
Fig. 27.	: Antiquities from the megalithic tomb	75
Fig. 28.	: Section and plan of village mound (East-West) (In between)	80 & 81
Fig. 29.	: Section across Fortification (STK-2)	87
Fig. 30.	: Plan and Section of STK-3 and 3A and I, Gateway Complex) (In between)	88 & 89
Fig. 31.	: Sections of STK-5, 6 and 9	91
Fig. 32.	: Layout of the Excavated remains of the early historical fort	96
Fig. 33.	: Painted russet coated ware	104
Fig. 34.	: Rouletted ware and Red Potsherd ware	109
Fig. 35.	: Black-and-red ware	117
Fig. 36.	: Other wares (Period II, 1-26a)	123
Fig. 37.	: Other wares (Period II, 27-54)	127
Fig. 38.	: Other wares (Period II, 55-71)	131
Fig. 39.	: Other wares (Period II, 72-90)	133
Fig. 40.	: Other wares (Period II, 91-107)	136
Fig. 41.	: Other wares (Period II, 108-114)	139
Fig. 42.	: Decorated sherds from Period II	141
Fig. 43.	: Pottery from Period III	145
Fig. 44.	: Decorated sherds from Period III	149
Fig. 45.	: Bangles and rings	164
Fig. 46.	: Terracotta beads	167
Fig. 47.	: Shell, glass and semi-faced beads	172

DESCRIPTION OF PLATES

Plate I : General view of the 'Village Mound' with the River Tungabhadra in the foreground.
Plate II : Medieval watch tower on the northern edge of the escarpment, with River Tungabhadra flowing 9 m. below.
Plate III : Renovated Early Chalukyan Temple.
Plate IV : Contour map of the 'High Ground' showing the high level gravel spread.
Plate V : Spread of high level gravel on the 'High Ground'. River Tungabhadra flowing to right in the background.
Plate VI : HLG-1. Gravel deposit lying over the weathered and undulated limestone bed-rock.
Plate VII : Middle Palaeolithic tools.
Plate VIII : Middle Palaeolithic tools.
Plate IX : Mesolithic tools.
Plate X : Mesolithic tools.
Plate XI : General view of passage type of megaliths in Cluster A.
Plate XII : Architectural details of Meg. AI.
Plate XIII : Meg AII during excavation.
Plate XIV : Meg. AII after excavation showing trancepted cist and passage, interconnected.
Plate XV : Cist of Meg. AIII during excavation showing burial goods.
Plate XVI : Meg. BXVII during excavation.
Plate XVII : Skeletal remains in the cist of Meg. BXVII in the upper level.
Plate XVIII : Skull and long bones with solitary iron arrowhead and potsherds on the floor slab of the cist of Meg. BXVII.
Plate XIX : Wavy line design on the face of the bounding stone of Meg. BXVII.
Plate XX : Meg. CI during excavation.
Plate XXI : Skeletal remains and pots on the bottom of the Meg. CI.
Plate XXII : Skeletal remains of goat/ram in the filling of Meg. CI.
Plate XXIII : Human skeletal remains in the filling of Meg. CI.
Plate XXIV : Stagewise filling of Meg. BI.
Plate XXV : Grave goods at the bottom of Meg. BI.
Plate XXVI : Meg. BVII during excavation.
Plate XXVII : Antiquities from the megalithic tombs.
Plate XXVIII : STK-1. General view showing work in progress.
Plate XXIX : STK-2.
Plate XXX : Gateway complex on the south (STK-3 & 3A).
Plate XXXI : STK-7.
Plate XXXII : STK-10.
Plate XXXIII : STK-12.
Plate XXXIV : Details of the stone rampart with baked brick facing.
Plate XXXV : STK-1. showing outer embankment of the moat.
Plate XXXVI : STK-12. showing the foundation (top) of the Early Chalukyan temple on the remains of the stone rampart.
Plate XXXVII : Remains of medieval fortification.
Plate XXXVIII : Ghost walls of Period II.
Plate XXXIX : Granaries along with ghost-walls.
Plate XL : Remains of brick-built house.
Plate XLI : Details of granary.
Plate XLII : Baked brick-built structure from Period II with a drain and a stone slab floor.

Plate XLIII : Structural remains of Period III.
Plate XLIV : Roof tiles and finials.
Plate XLVA : Painted russet coated ware.
Plate XLVB : Rouletted ware.
Plate XLVIA : Black-and-red ware bowl.
Plate XLVIB : Legged quern and muller.
Plate XLVII : Sculptures.
Plate XLVIIIA : Stone balls.
Plate XLVIIIB : Head of terracotta female figurine.
Plate XLIX : Terracotta cart wheels, hopscotches and spindle whorls.
Plate L : Terracotta votive objects.
Plate LI : Terracotta lamps and crucibles.
Plate LII : Terracotta ear ornaments.
Plate LIII : Terracotta playthings.
Plate LIV : Terracotta miscellaneous objects.
Plate LV : Iron objects.
Plate LVI : Iron objects.
Plate LVII : Copper objects.
Plate LVIII : Bone and ivory objects.
Plate LIX : Bangles and rings.
Plate LX : Terracotta beads.
Plate LXI : Shell, glass and semi-precious stone beads.
Plate LXII : Early historical and medieval coins.

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I. INTRODUCTION

A. OBJECTIVES OF THE WORK AND PLANNING

Newbold, Rea, Foote and Cammiade were the pioneers of archaeology in south India, though they were chiefly geologists. Their collections ranged from objects of Stone Age to those of the Medieval Period. Fortunately these were mostly catalogued. Others in the field continued their efforts and the lists of the objects were expanding. However, a 'time table', remained a desideratum. Wheeler was called from war-services to head the archaeological activities of this country in the year 1945. He planned his strategy and excavated at Arikamedu, an Indo-Roman trading-station on the east coast of India, and came out with a firm chrnological datum line for South Indian archaeology, nay, for the history of South India itself. Following him Krishnaswamy, Thapar, Srinivasan, Banerjee and Soundara Rajan explored and excavated in the South extensively. The general cultural sequence of the peninsula is now well established. The gaps in this frame are judiciously being filled. New problems that have come up in the wake of new discoveries are being tackled. By and large the archaeological activities in the South, like their counterpart in the North, became problem oriented. Sites were excavated with a view to solve some particular problems connected with the region or a culture. In the early fifties, for the first time in India, a large scale excavation was planned in the Nagarjunakonda valley with the aim to rescue the cultural wealth before its submergence due to the construction of a dam on the River Krishna. Excavations from 1954 to 60 yielded remains from Stone Age to Medieval Period, and important monuments were transplanted on top of the Nagarjunakonda hill.

Likewise the construction of a Hydro electric Project at Srisailam, some 100 km upstream from Nagarjunasagar across the same River Krishna, submerges nearly 107 villages, 60 in Alampur, Kollapur and Wanaparthy taluqs of District Mahbubnagar and 38 in Atmakur, Kurnool and Nandikotkur taluqs of District Kurnool, covering an area of 656·82 sq. km. In order, therefore, to discover the archaeological wealth of this area, an extensive exploration was carried out from the late sixties to the middle seventies, and 251 temples dating from the time of the Satavahanas to the Vijayanagar kings, and nearly 85 sites–situated all along the banks of the rivers Krishna, Tungabhadra, Bhavanasi and their many tributaries–with antiquarian remains ranging from the Prehistoric to the late Medieval period were listed. Of them all, 10 sites distributed among the Excavation Branch, Archaeological Survey of India (Nagpur), Department of Archaeology and Museums, Government of Andhra Pradesh (Hyderabad), Nagarjuna University (Guntur), and Birla Institute of Culture and Archaeology (Hyderabad), were taken up for excavation.

Satanikota, reported to have yielded in the course of exploration the antiquarian remains ranging from Stone Age to the late Medieval Period, was one of the four sites—the other three being Kudavelli, Malleswaram in the District Mahbhubnagar and Vamulapadu in the District Kurnool—assigned to the Excavation Branch of the Archaeological Survey

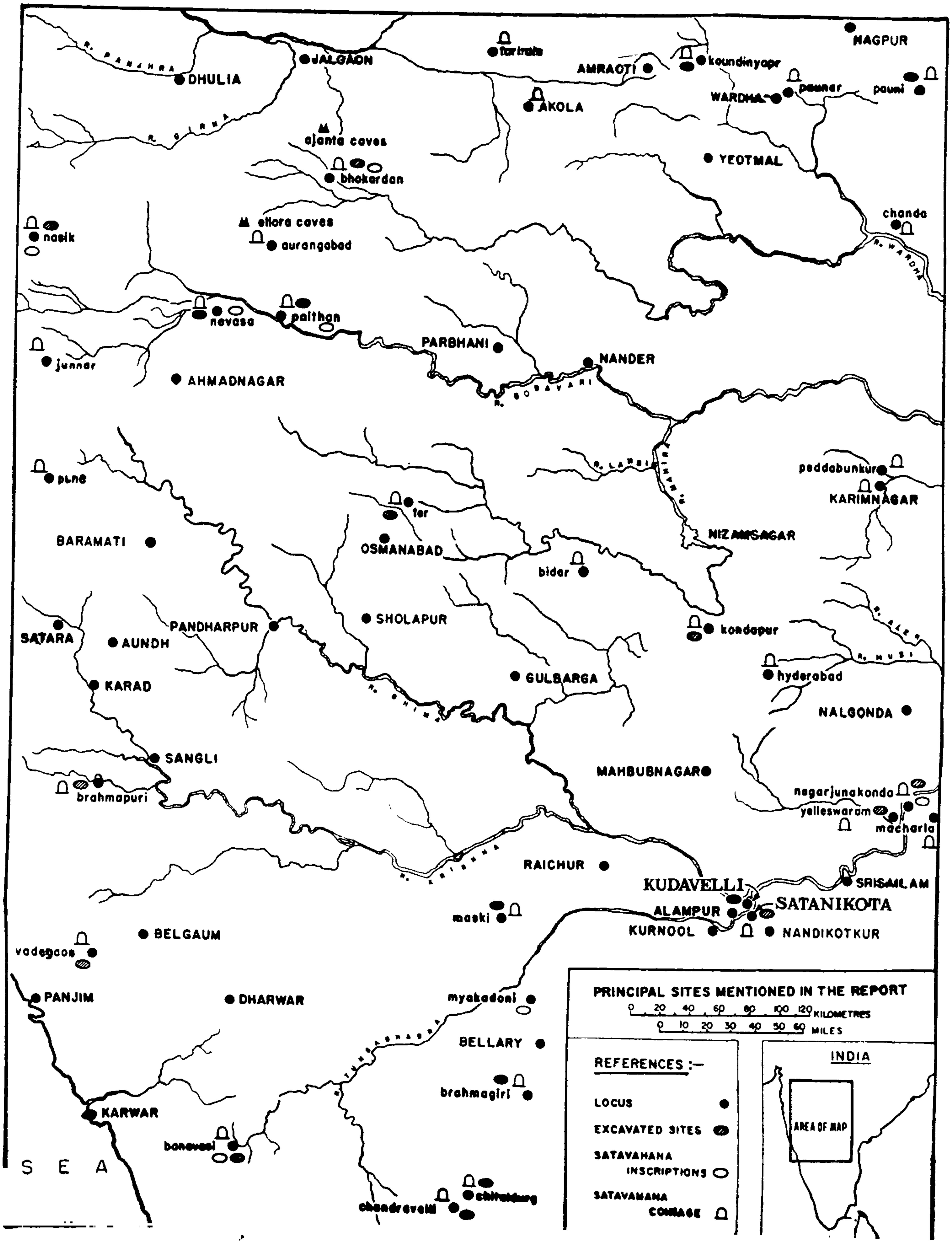
R. PANJHRA
DHULIA
JALGAON
AMRAOTI
koundinyapr
NAGPUR
pauni
WARDHA
AKOLA
R. GIRNA
ajanta caves
bhokardan
YEOTMAL
ellora caves
nasik
aurangabad
chanda
R. WARDHA
nevasa
paithan
PARBHANI
junnar
NANDER
AHMADNAGAR
R. GODAVARI
R. MANJIRA
peddabunkur
pune
KARIMNAGAR
ter
BARAMATI
OSMANABAD
NIZAMSAGAR
bidar
SATARA
AUNDH
PANDHARPUR
SHOLAPUR
kondapur
R. MUSI
hyderabad
KARAD
GULBARGA
R. BHIMA
NALGONDA
SANGLI
MAHBUBNAGAR
brahmapuri
nagarjunakonda
yelleswaram
macharla
RAICHUR
R. KRISHNA
KUDAVELLI
SRISAILAM
maski
ALAMPUR
SATANIKOTA
KURNOOL
NANDIKOTKUR
BELGAUM
vadegaon
PANJIM
DHARWAR
myakadoni
BELLARY
brahmagiri
KARWAR
banavasi
S E A
chitaldurg
chandravalli
PRINCIPAL SITES MENTIONED IN THE REPORT
0 20 40 60 80 100 120 KILOMETRES
0 10 20 30 40 50 60 MILES
REFERENCES :-
LOCUS
EXCAVATED SITES
SATAVAHANA INSCRIPTIONS
SATAVAHANA COINAGE
INDIA
AREA OF MAP

Fig. 1

of India, Nagpur. As stated above, the main object of these excavations was to unearth and report the antiquarian wealth of the sites before the construction of the dam.

The planning of the operation was done keeping in view the antiquarian remains—Stone Age, Megalithic and Early historical periods—scattered over a wide area, present habitation which occupies a major portion of the site, and the time at our disposal. The Stone Age tools and the Megaliths are mainly confined to the eastern part of the revenue jurisdiction of the village. This portion is elevated and designated as 'High Ground' in this report. Early historical pottery and bricks were found from in and around the mound on which the present village is situated. This is referred to here as 'Village Mound'. The habitations on the western and eastern (near High Ground) ends of Satanikota are mentioned by their traditional names as Enugulakota (elephant stable) and Gurramugadda (horse stable) (Fig. 2). The trenches on the 'High Ground' were laid to study the distribution of the artefacts in the profile of the gravel and named as HLG-1, HLG-2, etc. Selected megaliths from each cluster labelled serially, prefixed by A, B, and C, indicating the three groups have been opened. The major portion of the 'Village Mound' is under occupation at present. The trenches, here, were laid in grid pattern with a provision for extension in cardinal directions in the vacant southern portion. It was divided into four sectors A, X, Y and Z. In each sector trenches were numbered alphabetically from left to right and Arabic numbers were followed vertically. The north-west corner peg carried the reference number of each trench. Each trench in its turn was subdivided into four quadrants and numbered in Roman numerals in clockwise direction. Trenches were excavated keeping in view the special nature of this multi-cultural and fortified settlement. The elephant and horse stables, however, were badly eroded and clearance revealed only a part of the remaining structures.

B. PREVIOUS WORK

Along with Orissa and the southern parts of Madhya Pradesh, the region, now constituting the Andhra state, is older than the Himalayas, the entire Gangetic system and the plains of the east and west coasts.[1] In Andhra, the Kurnool District is traversed by two long hill ranges, the Nallamalais and the Erramalais, running north-south respectively on the east and the west of the district. These are the sub-ridges of the Eastern Ghats which are the oldest rock formations on earth. Smaller rivers like the Bhavanasi and Gundlakamma with their tributaries drain this district, while the big River Tungabhadra skirts the western and northern limits of the district. The sections of the smaller rivers reveal rich information about the Stone Age tools. These interesting physiographical conditions of the district attracted the attention of the geologists in the forties of the last century, when Captain Newbold discovered the prehistoric ossiferous Billasurgam group of caves in Nandyal taluq and collected from them some fossil bones.[2] Impressed by these finds Dr. King and Robert

[1] Sankalia, H. D., *The Prehistory and Protohistory of India and Pakistan*, (Pune, 1974) p. 55 ff.

[2] Robert, Bruce Foote, *IPPA*, (Madras, 1916), p. 118.

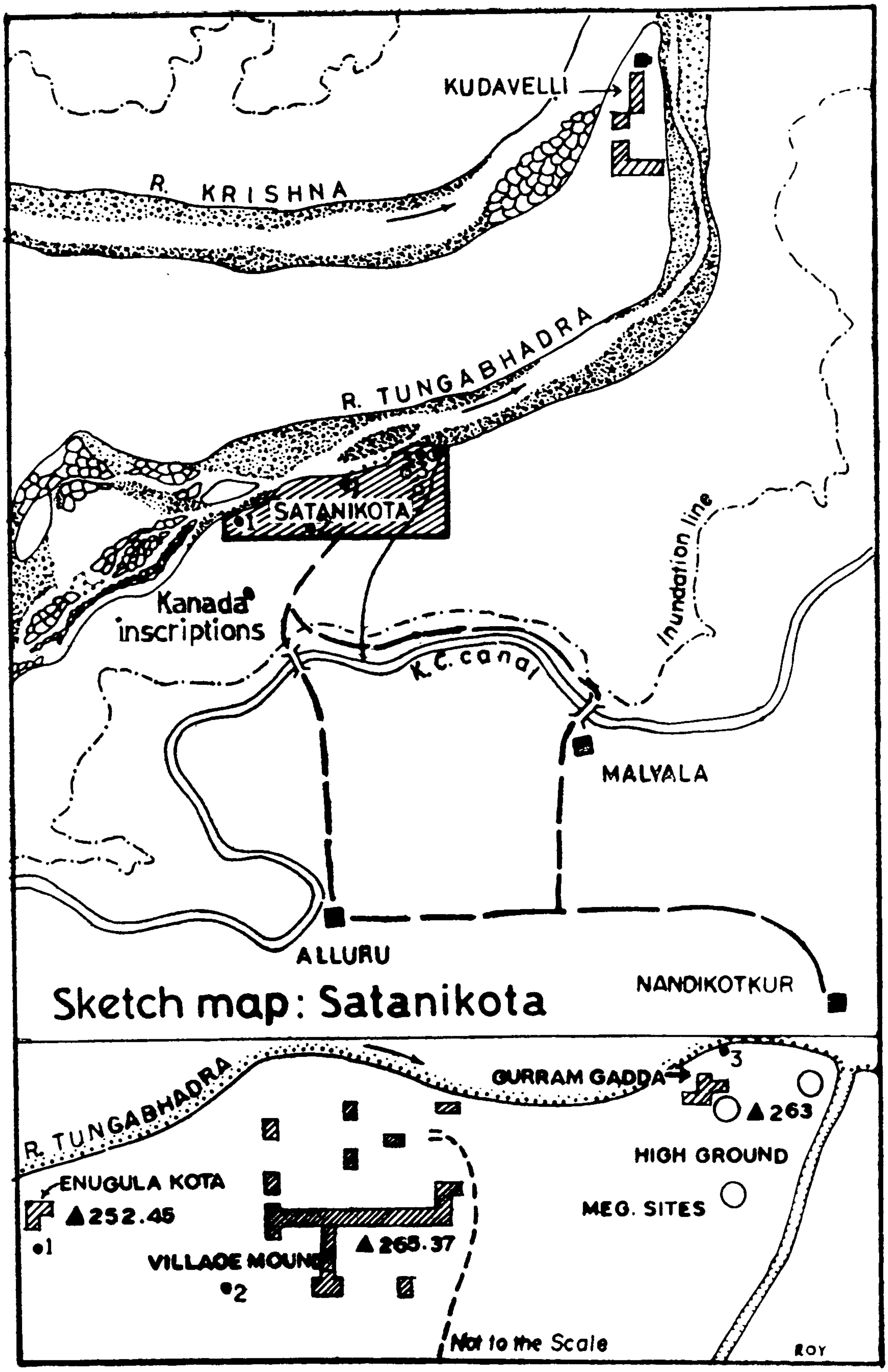
KUDAVELLI
R. KRISHNA
R. TUNGABHADRA
SATANIKOTA
1
Kanada inscriptions
Inundation line
K.C. canal
MALYALA
ALLURU
NANDIKOTKUR
Sketch map: Satanikota
R. TUNGABHADRA
GURRAM GADDA
3
263
HIGH GROUND
MEG. SITES
ENUGULA KOTA
252.45
1
VILLAGE MOUND
263.37
2
Not to the Scale
ROY

FIG. 2

Bruce Foote explored this region in 1865 and 1866[1] and came across a few palaeoliths in the lateritic gravels. Again during the last quarter of the 19th century, Foote explored this region and picked up interesting prehistoric and historical relics from Patpad, Kappatrala, Tsanugondla, Itikyala and discovered Yerra Zari Gabbi group of caves in Banganapalle taluq. Moreover, he carried out considerable excavations in the caves to find the stalagmite floor levels wherein he expected to find embedded fossil bones. But he could not find any. However, he discovered some neolithic tools in the vicinity of these caves. During 1880 Robert Sewell prepared the list of antiquarian remains in the Madras Presidency. Although his work was mainly confined to listing the inscriptions and monuments he included some known sites which yielded prehistoric and early historical remains in the Kurnool District.[2] However, it was only in the year 1914-15 that any serious archaeological exploration and excavation was carried out in the district when A.H. Longhurst,[3] in the capacity of Superintendent, Department of Archaeology, Southern Circle, Madras, had undertaken the excavation of a few megalithic cairn circles at Gajjalakonda. His excavations revealed interesting features of the megalithic culture. Later, in 1930 while touring along the Eastern Ghats L.A. Cammiade[4] discovered several important Stone Age sites at Giddalur, Yerragondapalem and Krishnapuram which yielded Series I, II and III tools made by the Victoria West technique, having their counterparts in Africa and which were, in due course, described at length by K. V. Soundara Rajan.[5]

Thus from the above survey of the previous work done in this area by eminent geologists and archaeologists, it is evident that Satanikota, rich in the prehistoric and early historical remains, failed to attract the attention of scholars in the initial stages of exploration and excavation in the Kurnool district region. It was only during the year 1937-38 that the Superintendent for Epigraphy, Raibahadur C. R. Krishnamacharlu,[6] touring this area in search of epigraphs discovered besides 14 inscriptions in Kannada characters datable to 6th to 8th C. A.D. on a boulder in a field, some natural rock formations on a waste land looking like miniature temples, prehistoric sites containing megalithic stone circles, some prehistoric tools and sherds of pottery near Satanikota, and only stone circles at Alluru. He promptly got them photographed and described them in his report. Among other things he described Satanikota as containing "the vestiges of a submerged and deserted city and seems to be connected with the Satahanihara of the early centuries of the Chistian era and must be associated with the Satavahanas whose sway extended over this part of the country." Satanikota was once again visited by P. B. Desai,[7] the Kannada Assistant to the Superintendent for Epigraphy, during 1942-43 who discovered an inscrip-

[1] Robert, Bruce Foote; IPPA (Madrass) pp. 113-119.

[2] 'List of Antiquarian remains in the Presidency of Madras', *Archaeological Survey of India* (New Imperial Series), Delhi, 1972, Vol. VII, pp. 86-102.

[3] *Annual Report of Archaeological Department, Southern Circle,* Madras, 1914-15, pp. 39-41.

[4] Cammiade, L. A; and Burkitt, M. C; 'Fresh Light on the Stone Ages in South-east India', *Antiquity*, Vol. IV (1930) pp. 327-339.

[5] 'Stone Age Industries near Giddalur, District Kurnool', *Ancient India,* No. 8 (1952), pp. 64-92.

[6] *Annual Report on South Indian Epigraphy* for 1937-38, p. 2.

[7] *ARSIE* for 1939-40 to 1942-43, Ins. No. 37, p. 163.

tion of the 10th century A.D. in Telugu characters on a boulder in a field 3·2 km away from the village. Finally this village was visited by H. K. Narasimhaswami,[1] the Second Assistant to the Superintendent for Epigraphy, during 1943-44. After surveying the villages in the Nandikotkur taluq, he observed that "while the western parts of the taluq, e.g. Satanikota on the bank of the River Tungabhadra, abounded in Pre-historic and other early remains, in the eastern parts of the taluq, such as Sivapuram, Kurukunda, Pratakota, Sangameswaram, etc. these are conspicuous by their absence, the earliest structural remains here being temples of the medieval Chalukyan period (10th to 11th C. A.D.)".[2] Unfortunately, nobody seems to have taken any notice of these observations and the interesting finds from Satanikota. By the passage of time, the significance of this site also faded till 1971-72 when the importance of early historical remains of the site was again brought to light by B. Rajarao of the South-Eastern Circle of the Archaeological Survey of India, Hyderabad.[3] Ultimately, when the construction of the Hydroelectric Project at Srisailam threatened to submerge a vast area dotted with more than 100 villages, the South-Eastern Circle of the Survey under I. K. Sarma[4] was assigned the task of exploring the whole of the submersible area in order to report its archaeological potentiality. Of the more than 50 sites reported to have contained very rich cultural assemblages a few sites such as Satanikota, Virapuram, Vamulapadu, Siddheswaram, Vellala in District Kurnool and Chagatur Kudavelli, Pydigutta, Uppalapadu, Chinnamarur, Peddamarur and Malleswaram in District Mahbubnagar were taken up for excavation by four agencies (See *supra* p. 1).

Of these, the Excavation Branch of the Survey conducted excavations at three sites-Satanikota, Kudavelli and Vamulapadu. The present report incorporates the rich cultural vestiges ranging from the Lower Palaeolithic Culture to the Late Medieval Period that came to light in the course of the excavation at Satanikota conducted during 1977-80. It is reported that the Department of Archaeology and Museums, Government of Andhra Pradesh, Hyderabad, conducted a small scale excavation at Satanikota much earlier[5] and came accross the early historical remains. But, neither earlier cuttings were noticed by the author, nor did the local people ever refer to the earlier excavation.

C. ACKNOWLEDGEMENT

Dr. H. N. Singh was the author's chief assistant throughout the excavation in the field, camp, and in the office as well. In the first season of excavations Sri A. K. Sharma, then Senior Technical Assistant in this Branch, had also been associated with

1 *ARSIE* for 1943-44 and 1944-45, p. 1.

2 However, in the light of recent explorations and excavations this observation is proved to be wrong. Because even the eastern parts of the Nandikotkur taluq for e.g. Virapuram, Yellala, Siddheswaram, and Vamulapadu yielded prehistoric and early historical remains.

3 *Indian Archaeology* 1971-72—*A Review*, p. 3.

4 Sarma, I K., *Report on the Antiquarian Remains in the submersible areas under Srisailam Hydro-Electric Project, A. P. (Hyderabad*-1977—Cyclostyled).

5 *Indian Archaeology*, 1974-75—*A Review* However, during our operation in 1977-1980 we did not come across any sign of earlier excavation at the site.

the excavation. In the completion of the report Sarvashri Dr. P. R. K. Prasad, Senior Technical Assistant, Dr. K. Ismail, H. P. Sinha, D. K. Ambastha and S. K. Mitra, Technical Assistants, rendered ungrudging help and their names have been again mentioned in the respective chapters they are particularly associated with. The photographs accompanying the report have been taken by Shri M. U. Qureshi assisted by Shri Pyare Singh. In addition Shri Qureshi helped me in the study of the Stone Age of Satanikota. The contour maps and the plan of the fort were drawn by Shri R. K. Roy who is responsible for line drawings of lithic tools as well. The plan and section embodying the report were drawn mainly by Shri Mohinder Singh and Shri R. K. Dwivedi. Minor antiquities and pottery were drawn by Sarvashri N. G. Banerjee, S. V. Sutaone, P. M. Bhope and K. M. Girhe. Shri A. K. Ghosh, Senior Draughtsman, has supervised the work of the Drawing Section from time to time. To all of them the author's most grateful thanks are due. The Drivers Shri B. Vaswani and P. C. Dhendwal were always available and readily helped in all the circumstances. The Attendants and Chowkidars of this Branch looked after the comforts and safety of the camp. The author takes this opportunity to record their help with sincere thanks.

Prof. Ajay Mitra Shastri (Head of the Department of Ancient Indian History, Culture and Archaeology, Nagpur University, Nagpur) has helped the author in writing the report on the early coins while Dr. Z. A. Desai, Director (Epigraphy) of the Survey has written a report on the medieval coins. The Anthropological team of the Anthropological Survey of India, Calcutta, led by Dr. Anadi Pal and assisted by Shri S. Biswas helped in the excavation of megaliths. Dr. A. N. Singh, Assistant Geologist (Petrology Division), Geological Survey of India, Nagpur, conducted partial semiquantitative estimation of pot-sherds. The author is indeed beholden to all these scholars and institutions for their kind cooperation. Mainly, the author is indebted to Shri B. K. Thapar, and Dr. (Mrs.) D. Mitra, both former Director General and Shri Jagat Pati Joshi, Additional Director General for their decision to entrust the excavation to him.

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The author expresses his sincere gratitude to his wife Mrs. Manashi Ghosh without whose constant encouragement this report would not have taken this form.

The author acknowledges with thanks the valuable assistance rendered by Shri N. K. S. Sharma, Stenographer of this Branch in typing various drafts and final report of the excavation. Thanks are also due to Shri Sakti Pada Chatterjee, for finalizing the drawings and Shri Ganesh Rao for going through the proofs. The printing of the book through the press was possible due to active co-operation of Shri S. R. Varma, Administrative officer (Publications), who took great pains at every step. I thank him with all fervour.

I must express my gratitute to Shri T. K. Sen of Naba Mudran (Pvt.) Ltd., Calcutta for full Co-operation and excellant printing.

II. THE SITE, ITS ENVIRONS AND BRIEF HISTORY

Satanikota (Lat. 15°55′ N; Long 78° 14′ E), located on the right bank of the River Tungabhadra (Fig. 2); (Pl. I), lies in Nandikotkur taluq of Kurnool District in Andhra Pradesh. The place can be reached by road from Kurnool, the nearest railway station on the Secunderabad-Bangalore section of South-Central Railway, via, Nandikotkur, a distance of 40 km. There is a regular bus service connecting Nandikotkur to Kurnool and Hyderabad. From Nandikotkur the approach to the site is either via, Malyala or Alluru villages. The *kuchha* road runs along the Kurnool-Cuddapah canal after leaving Malaya at a distance of 4 km from the taluq headquarters. The horse-drawn carriage which is the only means of transport rolls down to the right near the 61st km stone on the canal road to reach the site after 2 km drive. The latter route is fairly good upto Alluru village and from there a metalled road, 4 km long, leads to the site. The ancient site now occupied by the village Satanikota is visible from the canal road.

The general landscape is rugged and rocky, interspersed with fragments of cultivated fields. Amidst this topographical setting on three sides, except on the north, the ancient site (marked by the modern village) is situated on a natural formation. However, in the entire jurisdiction of the village (three thousand eight hundred and sixty acres) remains from the Stone Age to the Historical Period have been encountered. The northern edge is skirted by the River Tungabhadra. The river gets bifurcated into two channels, nearly one and half km upstream, and after skirting a huge granite outcrop the streams meet again near the northern toe of the mound. The most prominent outcrop of Archaean is in the mid-stream and referred to above. The rock is also exposed on the south-east of the site along the river. The rocks are pink and grey granites or granite-gneiss. Intruded into these oldest rocks are the veins of pegmatite and quartz. The veins vary in sizes from 20 to 25 mm. They have mostly north-south and east-west trends which are also the common joint directions of the granite-gneisses. However, the basic rocks are less jointed and massive. Next in succession are the rocks of the lime of stone and quartzite formations of Cuddapah systems. The major part of the thickness of the former comprises massive and flaggy limestones of various colours interlaced with shale and quartzite bands. The maximum exposed thickness of about 12 m is available on the north-east of the village on the southern bank of the River Tungabhadra. In the excavated section, particularly in one cutting (STK-1, dealt with below), on the 'Village Mound' weathered quartzite of greenish white colour was exposed to a total thickness of about one metre. The kaolinisation and subsequent removal of feldspar from the rock reduced the whole mass into a grit deposit. The position of quartz vein immediately below the mass and on the top of the weathered rock indicate its weathering *in situ*. The *murrum* deposit has been encountered only in the Satanikota (village mound). The next geological formation is the high level gravel (see below for detailed discussion). The thickness of this deposit varies from 1 to 1.25 m; whereas in the high ground to the east of village marked by megalithic circles it lies unconformably on weathered limestone. The next is silt deposit (see below) which

is also above the flood plane and originated in recent or sub-recent times. This plane is available on the north of the 'High Ground' and the 'Village Mound'.

The River Tungabhadra which flows from west to east is the main source of water. The water level in the river in April 1978, recorded 9 m below the escarpment on the northern side (Pl. II). Almost all the available plots around the site have been utilized by

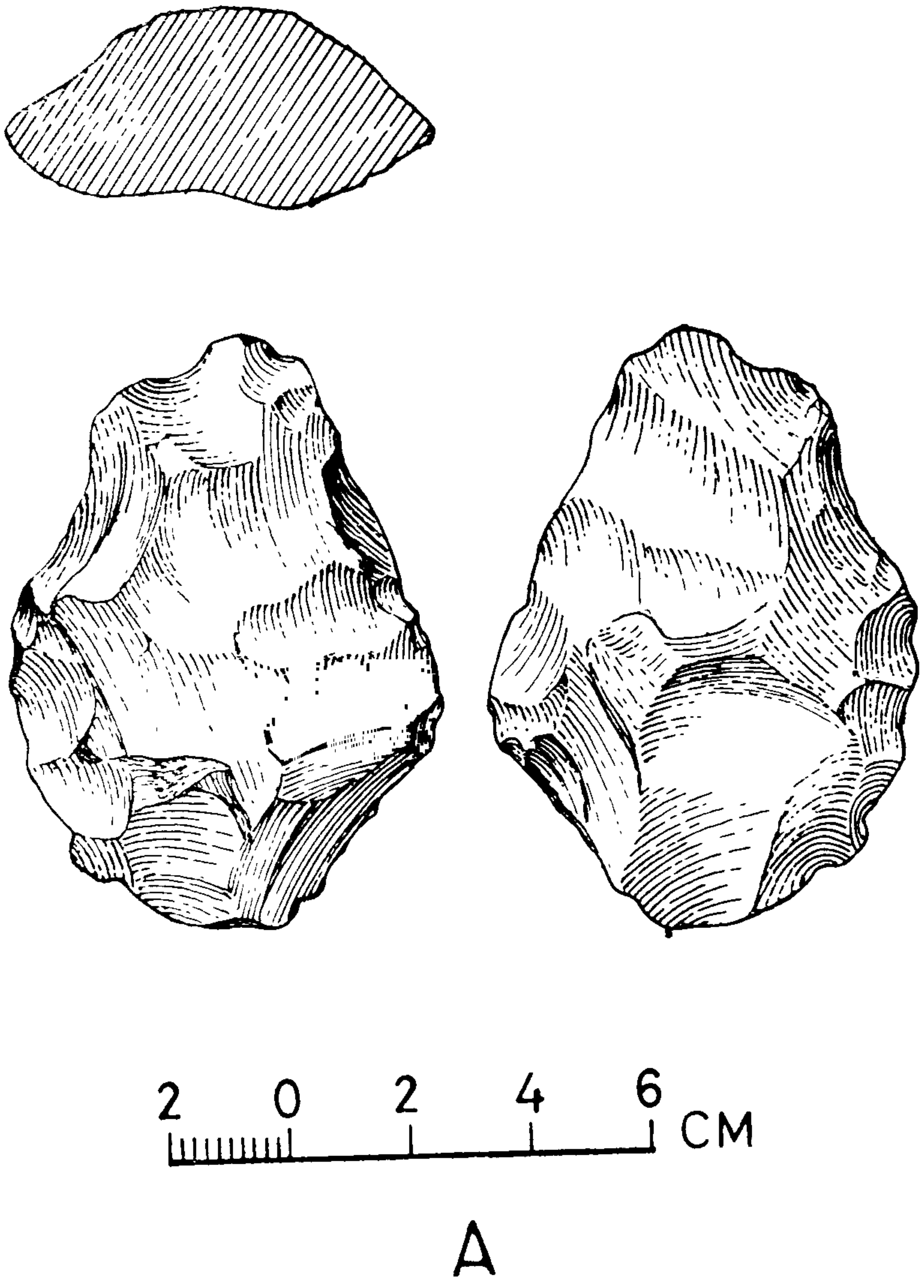

Fig. 3A

the villagers for cultivation. Easy availability of water from the K. C. Canal has turned this area into smiling green fields throughout the year. Except the jackal (Cains Aureus/*nakka*),* the fox (Vulpes Pengalensis/*gunta nakka*) and the mongoose (Herpestesed Wardsi/Mungisa), no carnivora mammals are available. Herbivora mammals are represented by common hare *(chevalapilli)* Rabbit *(kundelu)* and common squirrel (Funambulus Palmarum/*udatha*) only. Besides common birds such as sparrows, crows, wood-peckers, pigeons, storks, owls, partridges, nightjars and quails. The waterfront at Satanikota during the winter turns into a pleasant sanctuary for the migratory birds from the north.

The winter from December to February is a dry and comparatively cool season. In the rainy season (June to September), the south-west monsoon pours on an average 624·4 mm rainfall in the district. The area experiences storms, generally, during October and November.

Although the Lower Palaeolithic artefacts reported by the earlier explorer from the site and one or two very rolled specimens (Fig. 3A) were also collected by us, for all practical purposes, the Middle Palaeolithic people were the earliest inhabitants of the site. They had occupied the abandoned bed of the River Tungabhadra. This high level gravel is littered with Middle Palaeolithic artefacts. The gravel is the earliest Quaternary deposit in the area, and it is obvious that the Middle Palaeolithic man appeared on the scene much later, after the formation of the gravel, attracted mainly by easy availability of raw materials such as quartzite, quartz, chert, jasper and agate in pebbles of convenient size for manufacture of tools. They mostly manufactured scrapers, points, awls, borers and blades. Most of the tools are fresh in condition, and the presence of a large number of flakes and cores indicate that it was their camp site.

Mesolithic tools are also found from the same gravel. The tool types comprise mostly of blades and points including crescentic points. The tools were mostly of quartz, agate, chalcedony and jasper. The waste flakes and cores obviously suggest that it was a factory site of the Mesolithic people. A few long blades, a couple of flakes prepared on crested guided ridge technique and one black-on-red, handmade, slow wheelhr turned sherd betraying the chalcolithic hue and motif were found from the eastern part of the 'High Ground'. The sherd was actually found below the pit level of the Meg. CI. Further search, unfortunately, did not yield any more evidence. A few neolithic celts (Fig. 3B), however, were found on the surface as well as in an unstratified context. All these stray finds suggest that Satanikota was also inhabited during neolithic-chalcolithic times. On the other bank of the river and almost opposite to the site painted pottery along with neoliths, blades, steatite beads and copper were found from the excavation at Pagidigutta.[1] Another full fledged neolithic habitation was found at Virapuram (16°00′ N; 78°1″ E) nearly 12 km east of the site on the right bank of the River Krishna. The site is credited with three cultural periods and the earliest dwellers were neolithic. Their earliest phase was characterized by

* The words below the oblique marks are the Telugu equivalents.

[1] Information from Dr. Krishna Sastri, Chief Technical Officer, Dept. of Archaeology and Museums, Andhra Pradesh.

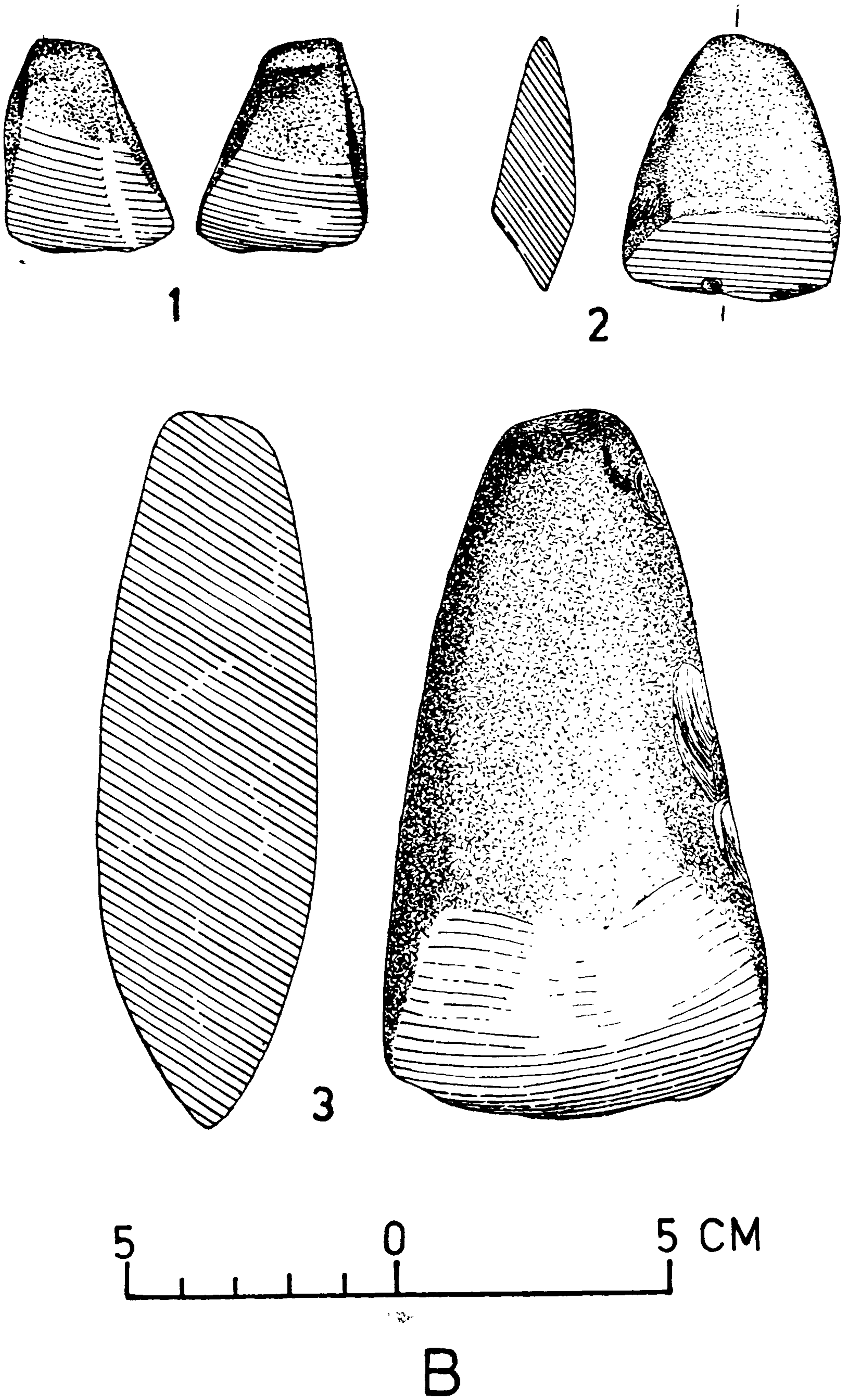

FIG. 3B

circular pits of 30 to 50 cm depth containing ash and potsherds. The next phase was distinguished by a burial of a child, microlithic blades, lunates made on chalcedony and chert, saddle querns, pestle, steatite beads of various sizes, bone tools and terracotta bulls. As regards pottery this phase yielded handmade sherds of buff, red, grey and black wares with slip and burnishing. The last phase belongs to Neolithic-chalcolithic culture. It yielded querns, mullers, steatite beads, microliths, bone tools, painted pottery, a tiny bead and an unidentified piece of copper and evidence of circular huts. The study of the plant remains in the Neolithic-chalcolithic level revealed the remains of Indian fruit jujube *(Zuzyphus)*, which suggests that the region had thorny scrub vegetation. The neolithic faunal remains at Virapuram indicate the presence of buffalo, goat, sheep, ass, gaur, chital, chinkara, hare, fowls, etc. It is significant to note that in the food economy of the neolithic inhabitants both wild and domestic animals played an equal role. However, the frequency of wild animals is more in the neolithic than in the subsequent cultural phases.[1] Neolithic celts were also reported from Kudavelli (15°56′ N; 78″14′ E), Velaturu (15″55′ N; 78′11′ E), Malleswaram (16°02′ N; 78°20′ E) and Gummadam (16°04′ N; 78°03′ E), etc. These were reported by I. K. Sarma.[2] There is an ancient site called Budidapadu (*Budida* means ash and *padu* means a refuse heap or mound of antiquity) in the Kurnool district. It is an ash mound site which has yielded lower neolithic pottery and painted ware.[3] In the same district (now in the Prakasam district) Sarma had noticed a very early phase of chalcolithic at Pusalapadu.[4]

A high ground nearly 22 km to the east of the Satanikota village was preferred by the megalithic folk as their burial ground. However, their habitation, as generally happens, could not be located. The megalithic field was dotted with numerous burials. But only twenty-nine megaliths could escape the farmer's crow-bar in the process of land reclamation. The megaliths are distributed in three clusters. Each cluster is dominated by one of the three types available here. While in Cluster 'A' Cist with Passage type was mostly found, Cluster 'B' was marked by Pit-Circles, and one Stone-Circle was found in Cluster 'C'. Does the segregation of the types within the megalithic field at Satanikota suggest an extension of socio-economic stratification of megalithic folk to the burial ground also? Architecturally, Cist with Passage burials in Cluster 'A' were the most elaborate and nicely fashioned in comparison to the other types. The pottery, iron objects and skeletal remains recovered from the tombs are similar to the ones found from South Indian megaliths. The skeletal remains are being studied by the Anthropological Survey of India, Calcutta. An

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[1] Author's personal observation and discussion with many workers of this excavation. Mr. K. Ismail (29/30-10-80) also noted identical features after the study of the material of the excavation kept at Hyderabad with the kind permission of Dr. T. V. G. Sastry, Director, Birla Archaeological and Cultural Research Institute, Hyderabad. See also 'Veerapuram Excavation', *Birla Archaeological and Cultural Research Institute, Exploration, Excavation Series* 1, (Hyderabad, 1981), pp. 1-2 & 7

[2] Information from Dr I K. Sarma.

[3] Sarma, I. K., 'Painted pottery from Pusalapadu, Andhra Pradesh, and further explorations in the Cuddapah and Kurnool Districts', *Indica*, vol. 4, No. 2, p. 76, f.n. 7.

[4] *Ibid.*, p. 81.

interesting evidence, however, comes from the excavation at Virapuram from the megalithic habitation levels. There the excavation revealed that the megalithic folk, besides exploiting aquatic resources like fish, crab and molluscs, regularly slaughtered domesticated cattle for food. It has also been noticed at the same site that the cattle bones in megalithic period are much larger in size than those of their counterparts in the neolithic. 'It is quite possible that this might have been a different breed, and has been introduced into this area by the megalithic people and is continued in the early historical levels.'

As regards plant remains, the evidence encountered from the same megalithic level shows that the megalithic people knew the grains of millet (Kodo millet [*Paspalum scrobicullatim* Linn]), cereals like barley *(Hordeum vulgare Linn)*, pulses like horse gram *(Dolichos biflorus Linn)*, hyacinth bean *(Dolichos lablab Linn)*, common pea *(Pisum arvense Linn)*, black gram *(Phaseolus mungo Linn)* and green gram *(Phaseolus aureus Roxb)*. Fruits like Indian jujube *(Zizyphus jujuba)* and Belleric myrobalan *(Terminalia chebula)* were also known to them.[1]

The sources for reconstructing the early history of this region prior to the Satavahanas are very insignificant and more of indirect and conjectural than of direct nature. However, if we take into consideration the Rock Edicts and Minor Rock Edicts of *Priyadarsi* Asoka found at Yerragudi (Erragudi)[2] and Rajulamandagiri[3] in Pattikonda Taluq of the Kurnool District and interpret their presence as suggestive of this region being a part of the Mauryan empire, we can safely push back the history of this region to the Mauryan period. Besides, some scholars opine that the present day Janagiri near Pattikonda is the ancient Suvarnagiri mentioned in the Asokan inscriptions[4] as one of the administrative centres of the empire in the south. If we accept this suggestion we can firmly state that these regions were included in the Mauryan empire during the reign of Asoka. Unfortunately, not a single site revealing any traces of material culture of the Mauryas has so far been discovered. Thus, barring the above mentioned inscriptions, no archaeological evidence going back to the Mauryan period has been discovered so far. When this is so with the Mauryas, some scholars go beyond the Mauryas, and by taking the help of the place names like Nandyala, Nandikotkur and Nandavaram—all in Kurnool District—go to the extent of holding that this region was included in the Magadha empire of the Nandas.[5] But, except for the placenames there is absolutely no evidence to prove this.

After the Mauryan, the region seems to have passed into the hands of the Satavahanas right from their early rule. Besides the very place name Satanikota (Satavahanakota), which suggests this place as being the for tof Satavahanas, the excavations yielded corroborative material evidence such as a lead coin of an early Satavahana crown prince Kumara Siri Sata, son of Satakarni I, baked brick and stone-slab-built fortification surrounded by a rock-cut moat, terracotta double moulded female figurine, diagnostic ceramics, tiles with

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[1] Veerapuram Excavation, *op. cit.*, pp. 7-10.

[2] *EI* XXXII, pp. 1-28; Rajbali Pandey, *Asoka ke Abhilekh,* (Varanasi, 1964), pp. 4 and 124-126.

[3] *EI* XXXI, pp. 211-18; Rajbali Pandey, *op. cit.* (1964), p. 129.

[4] Rajbali Pandey, *op. cit.*, (1964), pp. 119-112.

[5] *Kurnool District Gazetteer,* p. 31.

double perforations and typical beads, all of which, beyond any doubt, confirm the rule of the Satavahanas over this region. Besides these, we have strong inscriptional and literary evidences which collectively prove beyond any doubt that the modern place name Satanikota was derived from ancient Satavahanakota having something to do with none less than the Satavahanas. An inscription[1] found on a boulder lying in between Myakadoni and Chinnakaduburu hamlets, about 8 km away from Adoni, the taluq headquarters of same name in the Kurnool district, dated in the 8th regnal year of the Satavahana king Pulumavi, refers to *Satavahani-hara*, i.e. Satavahanahara (Satavahana district) as forming a part of the *Janapada* ruled by Mahasenapati Khamdanaga, a feudatory of the Satavahanas. The find-spot of the inscription suggests that the Kurnool district region was included in the 'Satavahanahara' of the Satavahanas. Consequent to the fall of the Satavahana empire, Khamdanaga declared himself independent. However, this did not last long. Of all the independent chiefs, the Pallavas emerged most powerful and occupied almost all the southern and south-eastern parts of the Satavahana empire. During this time, sensing the danger of losing his territory to the Pallava king-Khamdanaga entered into matrimonial alliance with the Pallavas by giving his daughter as well as his territory. This transfer of territory into the hands of the Pallavas can be attested by the Hirahadagalli copper plates[2] of Sivaskandavarman (first quarter of fourth century A.D.) which refer to *Satahani-ratthe* as included in their kingdom during the time of his father, i.e. about A.D. 300.

The above two inscriptions prove beyond any doubt that Satanikota, which is in the same district as Myakadoni and Chinnakaduburu villages, was not only included in the Savatavhana empire but also formed the key administrative head quarters of the erstwhile Satavahanahara.

As regards literary evidence the *Ramarajiyam* of Nandugula Venkaiah,[3] contemporary of Aliya Ramaraya, the son-in-Law of Krishnadevaraya of Vijayanagar, refers to Satanikota as one of the seven impregnable forts that were conquered in a series by Somadeva of the Aravidu dynasty, the progenitor of Ramaraya. It is interesting to note that the other six forts[4] mentioned in this connection are all situated in the Andhra-Karnataka area adjoining Satanikota. Therefore, there can be no doubt that this Satanikota mentioned by Nandugula Venkayya is the same as the modern village of Satanikota. Moreover, the remains of the fortification of the medieval period on the eastern side of the village put a seal of finality on this identification. All these evidences go to prove that the name Satanikota is obviously a corrupt form of the name 'Satavahanakotta', i.e. the fort of the 'Satavahanas', and suggest that at least the Kurnool region witnessed the Satavahana

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[1] *EI* XIV, pp. 153-155. See also *Comprehensive History of India*, (Ed. K. A. N. Shastri), p. 324; p. 298 n. 3.

[2] *EI*, I, pp. 5-9.

[3] Shastri, K. A. N; and Venkataramanaiah, N; *Further Sources of Vijayanagar History*, (Madras, 1946), Vol. III, p. 6. See also Aiyangar, S. K; *Sources of Vijayanagar History*, (Madras 1919), pp. 79-82.

[4] Mosalimadugu, Kandanavolu (Kurnool), Rachur (Raichur), Kalavakolanu, Ganginenikonda, Etagiri (Yadagiri).

rule from the beginning to the end. During all this period Satanikota seems to have played a significant role as one of the provincial headquarters of the Satavahana empire. The Maharathis, the feudatories of the Satavahanas, might have succeeded their overlords. A few lead coins of the Maharathi kings such as Sadakana puta, Maharathisa Mahatalava (ra), Maharathi puta sivala, Maharathisa Siva Maha Hathasa, Maharathisa Khada pori Halasa and Maharathisa Siva Khadasa are assignable from 50 B.C. to A.D. 150 along with brick shrines encountered in the excavations at Virapuram[1] situated on the right bank of the River Krishna, about 12 km east of Satanikota in the same district suggest a possibility of this area being under the rule of the Maharathis. Therefore, it is just possible that after the fall of the Satavahanas, the Maharathis might have claimed suzerainty over some adjacent regions such as Satanikota and ruled over them. Moreover, as the Maharathis were having matrimonial relations with the Satavahanas[2] and ruling over some provinces as feudatories, there is every possibility that they might have taken the advantage of the waning power of the Satavahanas and ultimately declared themselves independent rulers of the south-western parts, while the Ikshvakus, Chutus, Abhiras and Pallavas became independent in Andhradesa (Krishna-Guntur region), south, north-west and south-east regions respectively.[3]

The Pallavas, as mentioned above, started their career as officers or feudatories of the Satavahanas, rose to eminence and appeared as a ruling dynasty in the south and south-eastern parts of the Satavahana empire immediately after the last Sata vahana king Pulmavi IV.[4] It is clear from the inscriptions found in the districts of Bellary, Guntur and Nellore, that the Pallavas starting from the south-eastern marches of the Satavahana territory occupied the region of Bellary, Kurnool, Nellore and part of the Cuddapah districts and extended southwards till they conquered Kanchi and its adjoining areas.[5] As regards the Kurnool district, its western part, evidently the same as Satavahanahara of the Satavahanas, seems to have been included in the kingdom of the Pallavas as early as the time of Sivaskandavarman's father, i.e. before *circa* A.D. 300[6].

Further this area seems to have formed a part of the kingdom of the Kadambas who had taken advantage of the weakened position of the Pallavas in the wake of Samudragupta's invasion to the south and declared themselves rulers of the territory between the 'western sea and Prehara' (Tungabhadra or Malaprabha), sometime in the middle of the fourth century A.D.[7] Their rule lasted till A.D. 565 when the Early Chalukyan

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[1] Virapuram Excavation, *op. cit.*, (Hyderabad 1981), pp. 12-14.

[2] Sircar, D. C., *Select Inscriptions* (Calcutta, 1965), (Naneghat Inscriptions) No. 82. This fragmentary inscription mentions a widowed queen (Nayanika) as the daughter of a Maharathi and mother of Vedi Siri and Sakti Siri and wife of Siri (Shri Satakarni I).

[3] Shastri, K. A. N; *A History of South India* (Madras, 1976), p. 99.

[4] Subrahmaniam, K. R., *Buddhist Remains in Andhra and the History of Andhra between* 225 *and* 610 A.D., (Madras, 1932), pp. 71-72.

[5] Aiyangar, S. K., *Ancient India and South Indian History and Culture,* (Poona, 1941), Vol. I, pp. 499-500.

[6] Sircar, D. C., *Successors of the Satavahanas,* pp. 189-90. See also *EI*, Vol. I, pp. 5-9.

[7] Sastri, K. A. N: *A. History of South India,* (Madras, 1976), p. 110.

king Kirtivarman I conquered these areas and annexed them to his kingdom. Under this dynasty this region witnessed important religious and social developments. The Kalamukha sect of Saivism gained popularity. A few inscriptions[1] in early Kannada character, of sixth-seventh century A.D., found on boulders in a field about 1·50 km south-west of the Satanikota village attest to this. Practically all these inscriptions are somewhat like labels giving the names of certain individuals, and as such they are not of much historical significance. But a few inscriptions seem to throw light on some aspects of the cultural history of Satanikota. One of these inscriptions reads *Ravudra chandesvari.* This may perhaps indicate the prevalence of the worship of goddess Chandesvari. This was associated with Saivism (No. 331). Another inscription refers to one Attunana who was a teacher of the Kalamukha sect of 'Saivism (Mahesvara Kalamukha) and is described as leading a lonely life *(Ekantanivasi,* No. 333), and a matter of pride in good conduct to the people *(Lokasila-bhimana),* besides being called Utpattipidugu. We may perhaps conclude from this inscription that Satanikota was an important centre of the Kalamukha school of Saivism during the seventh century A.D. Epigraphy No. 339 mentions the *nisidhi* of a certain person whose name is only partially preserved. Another inscription (No. 334) refers to a lady as the footdust of the stone cutters, which may be taken to indicate that in the sixth-seventh centuries A.D. stonehr cutting industry existed and structural activity was going on a substantial scale. Inscription No. 337 speaks of three persons hailing from a place called Govardhana. The Govardhana cannot obviously be identified with the Satavahana administrative head-quarters of that name situated near Nasik in Maharashtra. It must have been apparently a place situated not far away from Satanikota. In any case they had come from Govardhana on a visit to Satanikota; this shows that it was a place of some importance during that period. It may thus be concluded from the inscriptional evidence that Satanikota enjoyed a fairly good degree of religious importance, particularly of Saivism, and was a place of substantial significance. But, except for a thoroughly renovated Siva temple, Kamarigudi (Pl. III), at present, there are no traces of any temple found in or around Satanikota. However, the ground plan of this renovated temple, which is similar to those of typical Early Chalukyan temples at Aihole, suggests that this temple was originally built during the time of the Early Chalukyas when they ultimately emerged as victors over the Pallavas in their long drawn wars and occupied this part of Andhra.

Taking advantage of the declining condition of the kingdom, Dantidurga, the feudatory chief of the Early Chalukyas, declared himself independent and founded the famous Rashtrakuta dynasty around A.D. 752. During their rule of nearly 250 years, the Rashtrakutas fought many wars with the Cholas, who emerged as the most powerful dynasty in the further south, all along the Krishna-Tungabhadra line. With the disappearance of the Rashtrakutas and the appearance of the revived line of the Chalukyas of Kalyani, the imperial conflict this time was between the Chalukyas of Kalyani and the Cholas to gain supremacy over the territories of the Vengi Chalukyas in the east and the Krishna-Tungabhadra doab in the south-west. Some fierce battles were fought, among other places,

[1] *ARSIE* for 1937-38, Inscription Nos. 330 to 343, pp. 41-42 (I am indebted to Dr. Ajoy Mitra Shastri for this note on the inscriptions).

at Kudalisangam.[1] It is worth-while to note in this connection that Kudalisangam is just 4 km north-east of Satanikota across the River Tungabhadra. The River Tungabhadra was recognised as the boundary line between the Later Chalukyas and the Cholas, the latter being to the south.[2] In the 12th century there arose four kingdoms, viz. the Yadavas of Devagiri, the Kakatiyas of Warangal and the Hoysalas of Dwarasamudra from the remnants of the Kalyani Chalukyas in the Deccan and south western parts, and the Pandyas from the disappearing Cholas in the south.

In the medieval period, this region came under the rule of the Yadavas who were succeeded by the Kakatiyas. Some of the inscriptions of Kakatiya Ganapati (1199-1262) are found in a Siva temple at Malyala which is 4 km south-east of Satanikota.[3] One of the invasions of the south by the army of Delhi Sultan Ghiyas-ud-din Tughlaq in A.D. 1323 resulted in the downfall of the Kakatiya dynasty and annexation of this region to the Delhi sultanate. Satanikota, which might have been a fortified garrison, passed into the hands of a Muslim chief under a governor of one of the 5 provinces into which South India was divided by the Sultan. This is attested by the coins found from the surface at Satanikota and belonging to Alau'd-Din Muhammad Shah Khalji of Delhi (1296-1316) and Shamsu'd-Din Muhammad Shah Bahmani of Bidar (1463-1482). During this time, Satanikota became famous as one of the unconquerable forts of this region. Gradually, the rule of the Tughlaqs' governors became unpopular in South India and there were revolts every where. Taking advantage of these disturbances, the western Chalukya chief Somadeva, whose progeney was Aliya Ramaraja of Vijayanagar, rose in revolt against the Sultan in Kurnool District and conquered the Satanikota fort along with six other forts.[4]

Throughout all this long span of time after the capture of the fort by Somadeva, Satanikota seems to have receded in importance and remained just a small village.

Nearly one hundred years ago Satanikota was a small village of about 500 souls. They mostly depended on cultivation of dry crops such as korra *(Setaria italice)*, arika *(Paspalum* jowar *(Sorghum vulghare)*. Though the river is perennial, its water could not be used for irrigation because the stream is flanked by steep rocky banks. Fishing is quite widely practiced. The completion of the K. C. Canal in 1871-72 has transformed the subsisting cultivation into commercial agriculture. Water was brought to the fields and new grounds were broken for cultivation. At present 567 ha of irrigated and 607 ha of dry land are under cultivation. The bullock-drawn ploughing is done by primitive implements, and for dry and wet lands different types of ploughs are used. The other instruments used for sowing purposes are *gorru* (sowing instrument) and *guntaka* (used for levelling the furrowed field). The main crops are paddy, groundnut, jowar and chilies. Tobacco is recently introduced. In 1978-79 (information gathered from the village during excavation), the total yield of the various crops is (in quintals), as follows : paddy 25,000; jowar

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[1] M. Ramarao, Presidential Address, *Proceedings of I. H. C.*, 1953, pp, 109-110; K. A. N. Shastri, *op. cit.*, (Madras, 1976), pp. 5-7.

[2] *Ibid.*, p. 183.

[3] *ARSIE* for 1937-38, Nos. 321 to 323, pp. 40-41.

[4] K. A. N. Shastri and N. Venkataramanaiah, *op. cit.*, p. 6.

2,500; korra 1,500; chilies 300; groundnuts 24,000; cotton and other crops 500. Nearly 50% of the food crops and 90% of the commercial crops are sent to market. The ordinary means of transport is bullockcart. The river is not navigable.

Nearly, two thousand heads including landless labourers out of a population of two thousand five hundred are depending on agriculture. The rest are engaged in their hereditary professions such as pottery making *(kumari)*,* blacksmithy *(kammari)*; goldsmithy *(kamsali)* and carpentary *(vadrangi)*. Among them Viswa Brahmins (blacksmiths) and goldsmiths and potters are still holding *inam* lands and carrying their professions. Weaving was done by Mala community (a Harijan sub-caste) till some fifty years ago. They were supplied with yarn from each family of the village, and in return for clothing they were paid either in cash or kind. Barbar (Mangali) and chakali (Washerman), also invested with *inam* lands, are serving even today. The five sub-castes Kammari, Kummari, Kamsali, Mangali and Chakali are collectively called "Pancha Palvati". Golla or Yadava (milkman) is another sub-caste which mainly depends on cattle and sheep. There were nearly three thousand bovines, 1,200 goats and 600 sheep in the village in 1978-79. Long ago when their number was comparatively less, twenty hectares of land were kept for grazing. However, it is now brought under cultivation. At present, when the river is fordable the shepherds and cowboys take their goats and cattles on to the ridge flanked by the river. The sheep and goats' dropping is a good manure, and particularly their stay in a field after harvesting, which has been a traditional method of manuring, is always welcome by the farmer who is ready to pay for that @ Rs. 50 to 60 per acre.

The villagers comprising Hindus, Muslims and a sprinkling of Christians dwell in harmony taking part in one another's festivals. The house of the well-to-do are mostly stone-built. On either side of the entrance of such houses with mostly thatched verandahs stone slab pavents are provided. A carved wooden framed door-way provides access to the house. The rooms are arranged on one side of the open courtyard. The others live in improvised houses and huts of various sizes. The houses of the first category numbering about 200, accommodate mostly big joint families, whereas in the second category, even a newly married couple build their own hut. The former are confined mostly to the main village, and the latter are in the extension of the village, on the south-eastern side adjoining the ancient settlement. The squatters are mostly outsiders drawn from near by and distant poor villages. The eastern part of the village proper is known as *peta* or bazar while the western part is *golla kota* or citadel. Though the demarcation is now no more, the echo of an earlier settlement pattern can be heard in them. The houses in the former area are generally aligned along the streets of the village. Wherever it is necessary, the streets are provided with terrace landings of wide span at regular intervals. The modern houses appear to have been constructed on the ruins of the earlier buildings, having, probably, the same ancient lanes and pathways. It is also significant to note that in spite of several soundings laid in the available open space, no structure was encountered. The negative evidence thus gathered from the cuttings became useful in reconstructing the early settlement pattern. The 'Kota'

* Words within brackets denote their Telugu equivalents.

or fort of the Satavahanas, here, was guarded by elephant brigade on the west and cavalry on the east. The Enugulakota and Gurramugadda still carry these names indicating their association through the centuries. The glimpses on the life, habitat, place name, etc. of the present Satanikota may be helpful in reconstructing the life of the people through the ages at least from the early historical period onwards. Though time did not stand still since then, yet in a slow moving society changes are bound to be slow.

III. STONE AGE

A. STRATIGRAPHY

Stone Age tools[1] mostly Middle Palaeolithic and Mesolithic were collected from the high level gravel in the entire jurisdiction of Satanikota village. The significant patches, however, occur between 257-260 m contour surface, which have escaped later gullies, and are also beyond the reach of the modern flood level of the river because of its elevated position. The 'High Ground' to the east of the village whose eastern extremity is marked by a number of megalithic tombs is filled with channel gravel (Pls. IV and V). In this area seven trenches, measuring each 4 × 4 m were laid in a row. The gravel rests unconformably on the weathered surface of the limestone bedrock.[2] The bedrock is heavily pitted and shows furrow marks with round edges. The furrows appear to have been developed on the homogeneous limestone rock surface due to its soluable character added by constant swirl of eddies which carried pebbles and sand round and round at one place during the course of transportation. Saucer shaped pits or pot-holes were also observed on the surface of bed rock dipping at low angles. The rock surface is highly decomposed or weathered. The pebbly gravel is loosely embedded in the matrix of ferruginous clay. The maximum thickness is 1 to 1·25 m at the highest contour of 260 m. The lateral spread is 500 m at the site. The gravel with the Middle Palaeolithic tools is also available on the left bank of the Tungabhadra near Kudavelli and Chagatur at 260 m contour surface. Therefore, the overall width of high level gravel is about 2 km. Its longitudinal extent is traced upto Virapuram, nearly 12 km to the east of the site on the River Krishna. The occurrence of gravel at these places indicate the probable course of the former river channel. The high level gravel occurs at an elevation of 14 m above the present bed level of the River Tungabhadra and the elevation is uniformly seen in the entire traverse along the right bank of the rivers Tungabhadra and Krishna from Satanikota to Virapuram forming the older terrace.

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[1] Only one specimen of Lower Palaeolithic tool (Fig. 3A) in a very rolled condition was collected from the site. It seems that the tool rolled to this site from somewhere in the upper reaches. However, for all practical purpose the site was effectively occupied during Middle Palaeolithic and Mesolithic age.

[2] In the main cutting (STK-1) of the 'Village Mound' the gravel lies unconformably on weathered quartzite (murrum). Mesolithic tools were recovered from the top of the gravel. The gravel at these two places belong to one and the same formation. The *murrum* of greenish white colour was exposed a total thickness of about one metre. The kaolinisation and subsequent removal of felspar from the rock reduced the mass into a grit deposit. The position of quartz vein immediately below the mass and on the top of the weathered rock indicates its weathering *in situ*. The bed rock belongs to Cuddapah system.

(i) Sediment Deposition

The gravel, being a stream deposit, is very well sorted; the coarser material is set in the upper stratum while the finer are laid down indicating a gentle flow. The well rounded, rounded and sub-rounded pebbles, when taken together, comprise 65% of the total and suggest that the pebbles have rolled for several kilometres. The smooth pebble surface also indicates that the movement of the old stream was gentle.

In well-rounded, rounded and sub-rounded forms, quartz alone contributed (6 + 19 + 20) 45%. Sub-angular quartz pebbles are only 4%. Quartz, therefore, has travelled quite a longer distance.

The percentage of quartzite pebbles dwindled in round, well-rounded and sub-rounded forms, (0 + 3 + 11), i.e. 14% while there are more sub-angular pebbles, 21% of this material. Quartzite is therefore derived from a local source and has not come from a longer distance. At Satanikota village about 5 km upstream, quartzite outcrop was encountered.

The gravel is not consolidated, the matrix being the admixture of fine sand, silt and clay with ferruginous content, and as such the entire deposit has acquired a red colour, which appears deep red or blood-red when moist or freshly excavated or exposed.

(iii) Morphometric Gravel Analysis (Area J & P Combined)

The average pebble length is 53 mm and the coarse pebbles (20 mm—60 mm) are present to the extent of 62% in the gravel; the percentage of cobbles (over 60 mm) being low, 38%. This gravel can be classified as a coarse pebbly gravel as per Alterberg[1] scale.

Form	Quartz	Quartzite	Limestone	Chalcedony	Banded agate	Chert	Total
Angular	—	—	—	—	—	—	—
Sub-Angular	4	21	3	1	3	3	35
Sub-rounded	20	11	1	—	4	—	36
Rounded	19	3	—	—	1	—	23
Well-rounded	6	—	—	—	—	—	6
Total	49	35	4	1	8	3	100

48% of cobbles are on quartzite which are mostly sub-angular and 26% are on quartz which are generally rounded and sub-rounded.

[1] Karl W. Butzer, *Environment and Archaeology*, (Chicago, 1974), p. 164.

Distribution order of cobbles formwise arranged in diminishing percentage.

Sub-rounded	Sub-angular	Rounded	Well-rounded	Angular
36%	35%	23%	6%	0%

Materialwise distribution of pebbles:

Coarse pebbles : 20 mm—60 mm (62)

Quartz	Quartzite	Agate	Chert	Limestone	Chalcedony
38	16	3	2	2	1

Cobbles :

Quartzite	Quartz	Agate	Conglomerate	Breccia	Limestone	Chert
18	9	5	3	1	1	1

(iii) Discussion

The Quaternary laterite, deposit, found near Nandikotkur, the headquarters of this taluka, belongs to Early Pleistocene.

The high level gravel resting on Cuddapah limestone bedrock, some 14 metres above the present bed, is probably the earliest depositional phase of the former river and represents the abandoned channel of the Tungabhadra (Pl. IV). The percentage of sub-rounded and rounded pebbles of the gravel 36% and 23% respectively mostly on quartz and quartzite exhibiting moderate sorting and little grading of the deposit, suggest that the channel was more often changing, resulting into shallow and wide basin. Similar gravel (HLG) with Middle Palaeolithic tool assemblage was also found on the left bank of the Tungabhadra. The overall width of the spread of the gravel is about two kilometres and a half. Owing to this shallow but wide basin this gravel can be called channel deposit.

Middle Palaeolithic man arrived on the scene probably at the end of the aggradational phase of the Tungabhadra. The early man was attracted to this site as this high level gravel served as a rich source of raw material for his tool kit.

It later encountered with climatic change and strong erosion took place. The rejuvenation was the result of intense humid climate and earth movements. The river eroded the gravel and cut through the soft limestone. This is very well represented at the site.

The rejuvenation phase was followed by ubiquitous aggradational phase. This aggradational phase belonged to the Late Pleistocene age. However, this aggradational phase is not well posed at the site. The vertical rock face all along the river suggests that

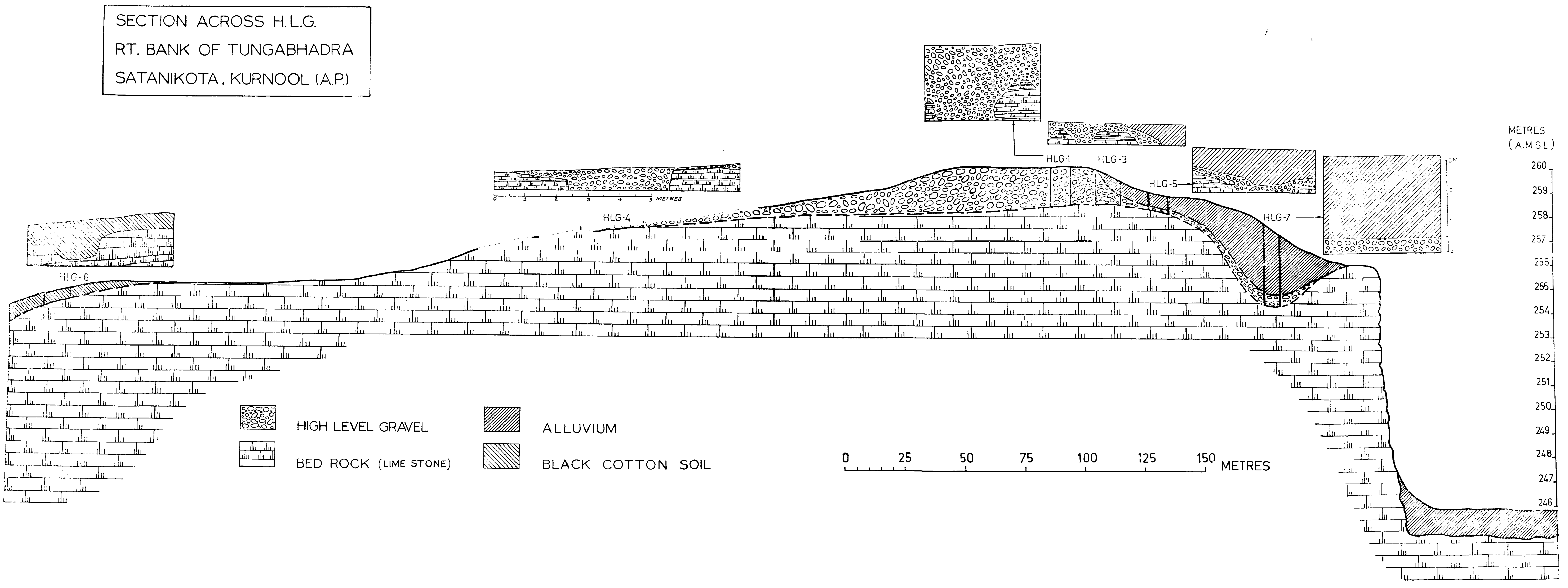
SECTION ACROSS H.L.G.
RT. BANK OF TUNGABHADRA
SATANIKOTA, KURNOOL (A.P.)
HLG-1
HLG-3
HLG-4
HLG-5
HLG-6
HLG-7
METRES
METRES (A.M.S.L.)
260
259
258
257
256
255
254
253
252
251
250
249
248
247
246
HIGH LEVEL GRAVEL
BED ROCK (LIME STONE)
ALLUVIUM
BLACK COTTON SOIL
0 25 50 75 100 125 150 METRES

Fig. 4

subsequent rejuvenation had removed every evidence of earlier deposit. We may encounter this deposit in some near by nullah.

The dry climate changes were over. Once again wetter conditions prevailed for another erosional phase. This was the beginning of Holocene age *circa* 10,000 B.P. The alluvium deposited in the earlier aggradational phase started eroding and the load went on decreasing and the River Tungabhadra entrenched its valley to the present day.

That the area attracted the Mesolithic "hunter/collector" is evident from the microlithic tools discovered on the gravel top.

The mixed bag containing Mesolithic tools, Black-and-red Ware (megalith), and comparatively fresh animal bones from alluvial deposit belong to recent or sub-recent origin. This phenomenon is well represented at the site and recorded in the trenches HLG 3, 5 and 7.

There is no datable material associated with the high level gravel. The precise date for this aggradational phase is far from secure. The climatic condition prior to aggradational phase was suitable for extensive laterite formation and that found exposed near Nandikotkur belong to Early Pleistocene. The rock surface also eroded and on this eroded surface high level gravel was deposited in the subsequent aggradational phase in the Middle Pleistocene. This gravel was subsequently eroded in the next rejuvenated phase. Therefore, the high level gravel is younger than laterite and older than Early Holocene. The Middle Palaeolithic tools were found on the top of the gravel, but there is no unconformable relationship between the tool-bearing top horizon and the sterile lower part of the gravel. The tool maker had appeared after the formation of the gravel towards the end phase of gravel aggradation. It is therefore appropriate to postulate that the Middle Palaeolithic tools are older than the Late Pleistocene aggradational phase, i.e. earlier than *circa* 40,000 B.P.

(iv) Excavation

To ascertain the nature and thickness of the deposit the surface of the gravel which yielded numerous Middle Palaeolithic tools and sporadic microlithic tools, trenches were laid out in a manner so as to get a profile or cross section of the deposit overlying the bed rock (Cuddapah limestone) (Fig. 4). The main objective, however, was to check if the Stone Age artefacts occur beneath the surface of the gravel which would throw light on the period of deposition of the gravel.

The first trench HLG-1 (Pl. VI) was taken at the highest contour of 260 m above mean sea level, i.e. about 14 m above the present river bed. Incidentally this area was littered with flakes and tools of Middle Palaeolithic Culture, the tool density being one tool on a square of 50 cm. The cutting was oriented north-south so that the section remained perpendicular to the river course (west-east). Upto a depth of 12 to 15 cm the Middle Palaeolithic tools and flakes are very much similar to the ones obtained from the surface. The size of the pebbles after 15 cm of dig increased from 4-5 cm to 7-10 cm indicating some kind of

sorting or stratification.[1] The frequency of the Middle Palaeolithic tools decreased in proportion to the depth upto 15 cm. Below this depth the gravel remained totally sterile. Interestingly two microlithic blades and a very small sherd of a coarse pottery, about 10 mm thick section, were also obtained from a depth of 10 cm. The occurrence of a potsherd and microliths along the Middle Palaeolithic tools may be due to the regular tilling and ploughing ofthe area. In fact the presence of microliths and potsherd along the Middle Palaeolithic tools indicate that the soil or gravel was disturbed.

At a depth of one metre, the bed rock was encountered. The surface of this limestone rock, unearthed beneath the gravel, is highly weathered and undulated. The undulations are very well marked and appear as ferrous or solution grooves cut in the soft rock caused due to differential weathering. The gravel overlies the rocky bottom and is filled up uniformly in the grooves wherever they occur. The fines (smaller pebbles), were generally found nearest to the rock bottom, while cobbles occupied the middle of the channel suggesting a gentle flow of the former stream of the Tungabhadra.

In the adjoining trench of HLG-3, (259 m contour), towards the river, besides the gravel over the bed rock, a marked strata (wedge) of alluvium overlying the gravel is encountered. This alluvium is in fact resting against the gravel and belongs to the aggradational phose of the sub-recent origin, and was deposited under the dry or semi-arid conditions after rejuvenation of the river in the Early Holocene period. The cutting is totally sterile and except for a few flakes which were collected from the surface no artefact is recovered *in situ.*

The next trench HLG-5 (258·5 m contour), more towards the river, also turned out to be sterile. The section clearly showed the alluvium overlies the gravel. The gravel deposit beneath the alluvium, however, becomes very thin.

Nearest to the river is HLG-7 (258 m contour, Fig. 5). This cutting represents alluvium at its deepest 3·25 m above the gravel. The thick deposit of alluvium at this place is a result of a sufficiently deep erosion of the gravel, forming a channel of shorter width and may have been formed during the time of rejuvenation. The gravel has a very thin deposit and is diminishing progressively as we go towards the river. The gravel did not yield any artefacts.

From 15 cm to a depth of 1·25 m from the top, a few microliths were unearthed along with pottery which includes Black-and-red ware, red ware and red-slipped ware. The deposit below this is totally sterile. This thin deposit of about a metre above the sterile alluvium is washed material obviously deposited over the pottery, which was redeposited and got stuck up owing to the local land form (deep channel below), and is fairly recent.

The megalithic Pit-circle people also selected this site as their burial ground due to evenly spread thick (3·25 m.) alluvium deposit.

[1] The larger sized pebbles (cobbles) were perhaps removed by the agriculturists upto the depth of about 15 cm to 20 cm to facilitate agriculture, and as such, this sudden change of pebble size exhibited probably a false horizontal line at this level.

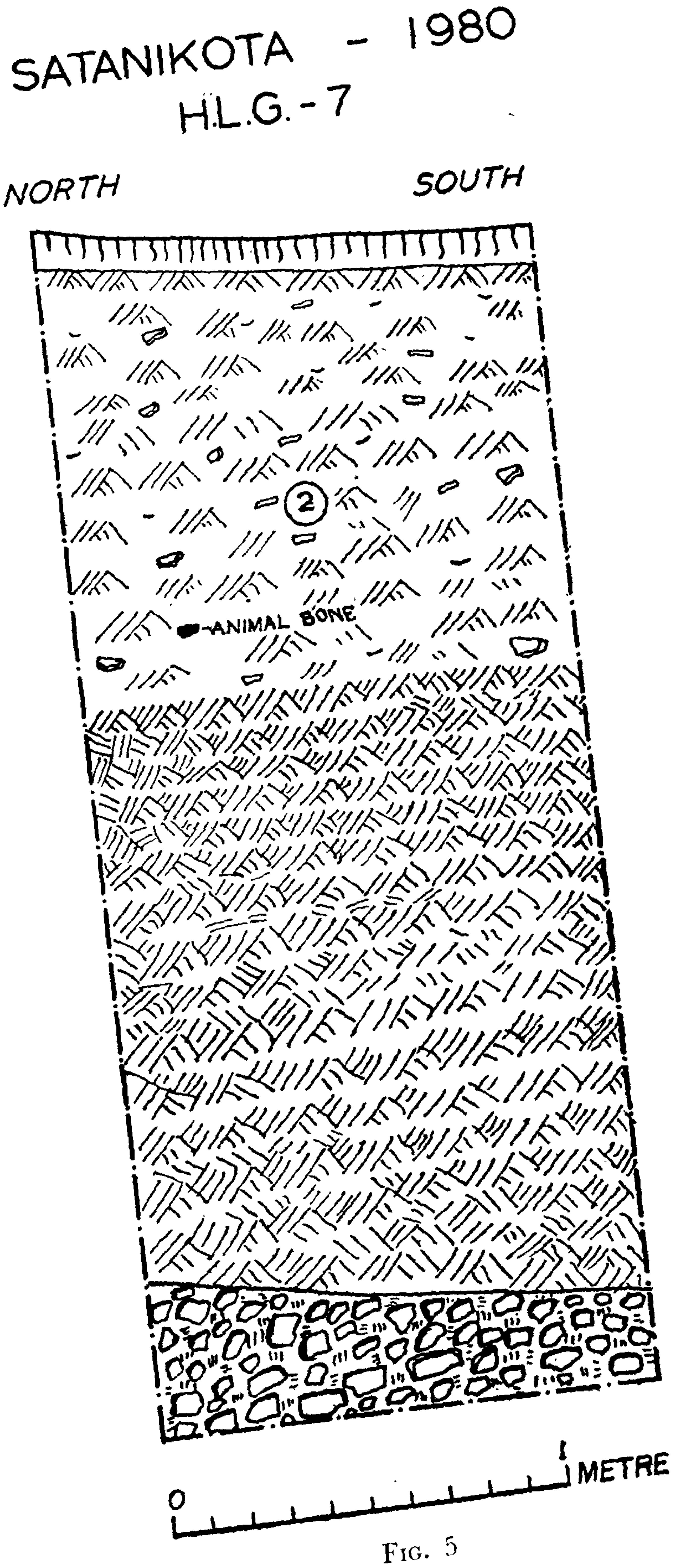

FIG. 5

On the western edge of the gravel (255 m contour) where it is seen touching or lying on the exposed bed rock, one trench (HLG-6) was sunk. At this place the rock is gently sloping and is overlain by black cotton soil. The cutting in this soil was sterile and the rock was exposed below 25 cm to 50 cm.

The date of Middle Palaeolithic culture in this area can be the same as one of high level gravel at Wadoli and Waghodi on the River Godavari,[1] where the undisturbed upper part was tool bearing and those tools are older than the Late Pleistocene alluvial fill, i.e. earlier than *circa* 40,000 B.P. and belonged to the end phase of aggradation.

B. MIDDLE PALAEOLITHIC CULTURE

(i) General Observation

The Middle Palaeodithic sites were located on the abandoned right bank of the River Tungabhadra at Satanikota. The tools were collected from the 'High Ground' and the 'Village Mound' as well. The tools were found mostly from surface, and upto a depth of fifteen centimetres in excavation, below which lies a barren deposit of high level gravel.

(ii) Tool Types

The total number of artefacts is only 146. The componentwise distribution of the same is as follows :

Scrapers (77), Borers (14), Points (29), Choppers (4), Flakes (14), Cores (8) and Waste Flake (Nil). The industry is dominated by scrapers which account for 52·3 % and the points and the borers are represented by 9·2% and 20%, respectively. The absence of waste flake may be due to the fact, that the actual site of manufacture of tools could not be located within our area of operation but it must not be very far away as most of the tools are in a good state of preservation.

This industry relied heavily on jasper of various colours but tools were also made on chert, agate and quartzite. The cherty raw material was readily available to the prehistoric man for making tools in the high level gravel deposit and as well as from the vicinity. The raw material-wise distribution is presented in Table I.

Mostly tools were fashioned on end flakes and a few on side and intermediary flakes. However, a small number of tools were found to be on nodules and those of bifacial choppers are on small cores or pebbles. Secondary flaking has been done generally along the margins to form the tools. In a small quantity of tools a tendency of inverse retouching has been noted. The composite tools such as the point-cum-scrapers and the borer-cum-scrapers, though in a limited number, are also present within the collection.

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[1] Joshi R. V. *et al*, 'Excavation at Wadoli-Waghodi—A Middle Palaeolithic site on The High Level Gravel of the Godavari River', *BDCRI*, Vol. 39, 1980, p. 47 ff.

TABLE—I

TYPOLOGICAL FREQUENCY CHART, MATERIALWISE

	Typology	Brown-Jasper	Agate	Chert	Red jasper	Reddish-brown-jasper	Quartzite	Green-Jasper	Total
	1.	2.	3.	4.	5.	6.	7.	8.	9.
1.	Side Scraper	3	2	8	—	5	—	—	18
2.	Convex Scraper	7	3	3	—	1	1	—	15
3.	Side-cum-concave scraper	—	—	2	—	—	1	—	3
4.	Hollow-cum-convex scraper	2	—	2	—	—	—	—	4
5.	Round Scraper	1	—	3	—	3	1	—	8
6.	End scraper	3	1	2	—	1	—	1	8
7.	End-cum-hollow scraper	—	1	3	—	—	—	—	4
8.	Thumb-nail-scraper	2	—	—	—	2	—	—	4
9.	Nose-cum-convex scraper	—	—	—	—	—	—	—	—
10.	Convex-cum-side scraper	4	—	—	—	1	—	—	5
11.	Hollow scraper	4	—	—	—	2	—	—	6
12.	End-cum-side scraper	—	—	—	—	1	—	—	1
13.	Point	4	2	8	1	4	2	—	21
14.	Point-cum-side scraper	1	—	—	—	2	—	—	3
15.	Awl point	2	—	1	—	1	1	—	5
16.	Borer	4	2	2	—	—	1	—	9
17.	Borer-cum-hollow scraper	1	—	1	—	1	—	—	3
18.	Borer-cum-side scraper	1	—	—	—	1	—	—	2
19.	Bifacial chopper	—	1	2	—	—	1	—	4
20.	Core	3	—	2	—	2	1	—	8
21.	Simple flake	6	1	5	—	—	2	—	14
22.	Waste flake	—	—	—	—	—	—	—	—
		48	13	44	1	27	11	1	145

* Sl. Nos. 1 to 9 and 13 to 17 and Sl. No. 19 above are illustrated and described.

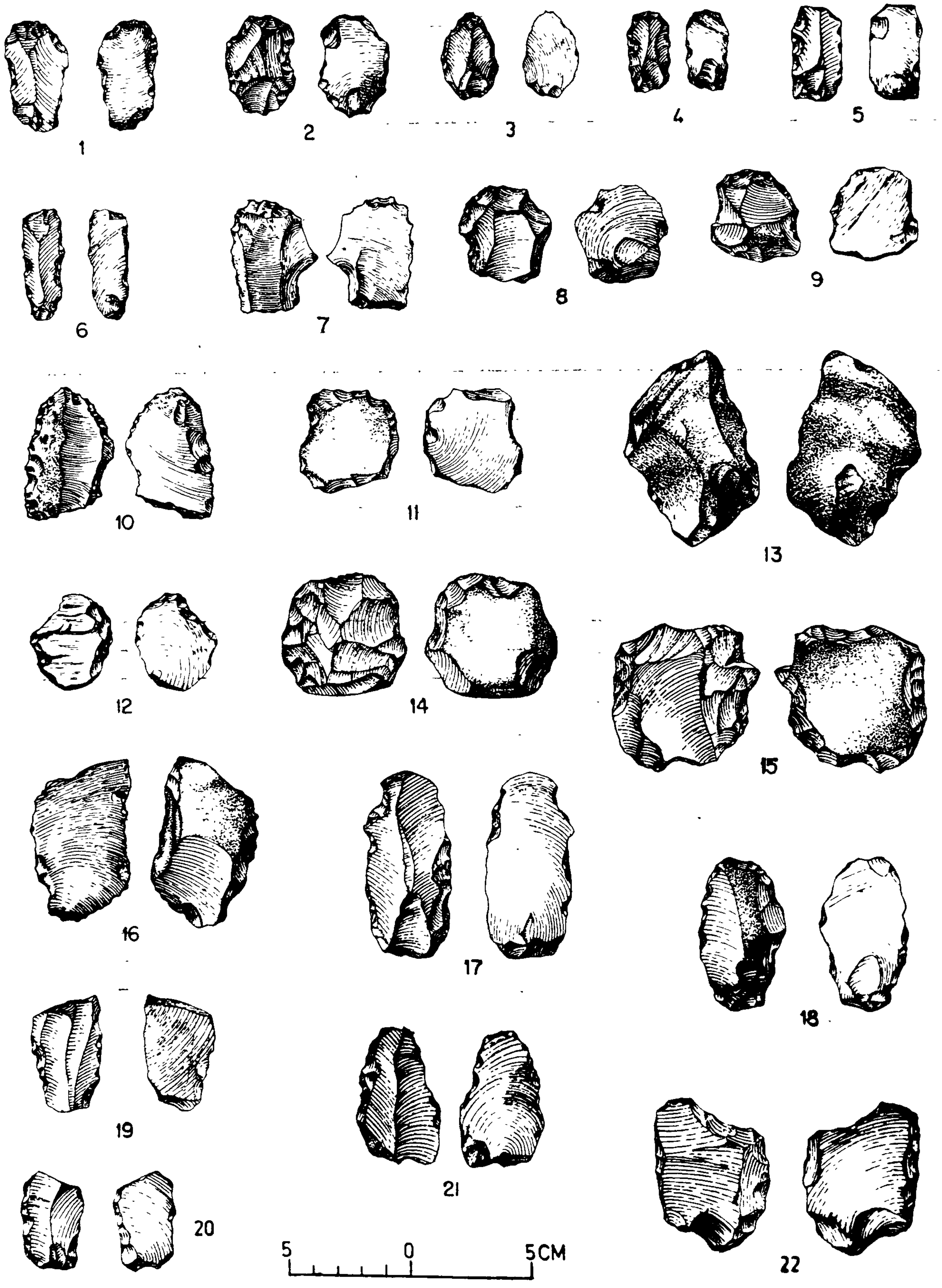

FIG. 6

The selected specimens are described and illustrated below :

1. Side Scraper

(i) Chert. A side scraper on thick end flake, retouched along the sides. Heavily rolled. (Fig. 6, 13; Pl. VII, 13).

(ii) Brown Banded Agate. Prepared on a sub-triangular end flake. Secondary work done along the margin to form a side scraper. (Fig. 6, 21; Pl. VII, 21).

(iii) Reddish Chert. A sub-rectangular thick flake, marginally retouched along the longer side. (Fig. 6, 19; Pl. VII, 19).

(iv) Reddish Brown Chert. A long rectangular thick flake-blade. Retouched along the longer edges. (Fig. 6, 17; Pl. VII, 17).

(v) Red Jasper. An irregular end flake. Primarily retouched along the right margin to form scraping edge. Cortex retained near the upper half and left margin. (Fig. 6, 16; Pl. VII, 16).

(vi) Red Jasper. A long thick oval end flake. Retouched along both margins. Medial ridge retains cortex. Platform prepared, bulb diffused. (Fig. 6, 18; Pl. VIII, 18).

(vii) Chert. An asymmetrical thick flake. Retouched along the right convex and left edge. Cortex retained near the medial ridge along the left side. (Fig. 6, 10; Pl. VII, 10).

(viii) Banded Agate. A long end flake-blade. Retouched inversely along both the longer margins and towards the broader end. (Fig. 6, 6; Pl. VII, 6).

(ix) Reddish Brown Jasper. Similar to No. 6 (Fig. 6; Pl. VIII, 20).

(x) Chert. Similar to No. 6 (Fig. 6, 4; Pl. VII, 4).

(xi) Reddish Jasper. Similar to No. 6 but for retouch near the end. (Fig. 6, 5; Pl. VII, 5).

2. Convex Scraper

(i) Agate. A short thick oval flake. Steeply retouched along the thick convex edge. Not illustrated.

(ii) Jasper. A thick simple asymmetrical flake. Retouched along the convex edge. Not illustrated.

(iii) Jasper. A thick semicircular flat based core, steeply worked along the convex edge. (Fig. 6, 9; Pl. VII, 9).

3. Side-cum-concave Scraper

Reddish Banded Chert. A thick sub-rectangular end flake. Steeply retouched along the right margin to form side scraper. Undersurface bulb diffused. Along the right margin deep flakes removed to obtain a concave scraping edge. (Fig. 6, 22; Pl. VII, 22).

4. Hollow-cum-convex Scraper

Reddish Brown Chert. Prepared on an oval end flake. Secondary working

done along the right convex side. Undersurface—worked near the hollow margin which serving as hollow-cum-convex scraper. (Fig. 6, 12; Pl. VII, 12).

5. Round Scraper
   (i) Reddish Brown Jasper. A small round flat pebble fully flaked on the upper surface. From the undersurface around the margin shallow flakes removed retaining cortex in the centre. (Fig. 6, 15; Pl. VII, 15).
   (ii) Jasper. An oval end flake. From undersurface one large flake removed retaining cortex portion on the other half side. Secondary work done along the margin. On surface few flakes removed. Not illustrated.
   (iii) Red Jasper. A sub-rounded small pebble. Shallow to deep flakes removed along the three-quarter margin of periphery producing a round scraper. Under-surface unworked (Fig. 6, 11; Pl. VII, 11).
   (iv) Brown Chert. A thick round core scraper. Alternately flaked along three-quarter margin. Uppersurface fully flaked. Undersurface partially flaked and most of the pebble portion retained. (Fig. 6, 14; Pl. VII, 14).

6. End Scraper
   (i) Brown Chert. Made on an end flake. Secondary work done near the bulbar to form an end scraper. (Fig. 6, 1; Pl. VII, 1).
   (ii) Chert. A short end scraper on thick flake. Retouched near the convex edge. Few small flakes removed from undersurface near the top. (Fig. 6, 7; Pl. VII, 7).

7. End-cum-Hollow Scraper
   (i) Reddish Brown Chert. Prepared on an oval end flake. Near the tip a few flakes removed making working edge as end scraper. Along the right margin a few deep flakes removed to produce hollow-cum-end-scraper. (Fig. 6, 2; Pl. VII, 2).
   (ii) Brown Chert. Prepared on a thick asymmetrical flake retouched along the right margin to obtain hollow scraping edge. Near the broader end a few flakes removed shaping an end-cum-hollow-scraper. Not illustrated.

8. Thumb-Nail Scraper

   Reddish Brown Jasper. Prepared on a short thick flake. Flaking done along the convex edge to form a thumb nail scraper. From the central portion a flake has been removed in an arc to facilitate holding. (Fig. 6, 8; Pl. VII, 8).

9. Nose-cum-convex Scraper

   Reddish Chert. A short nose scraper prepared on flake, convex sides finely retouched making it convex-cum-nose-scraper. (Fig. 6, 3; Pl. VII, 3).

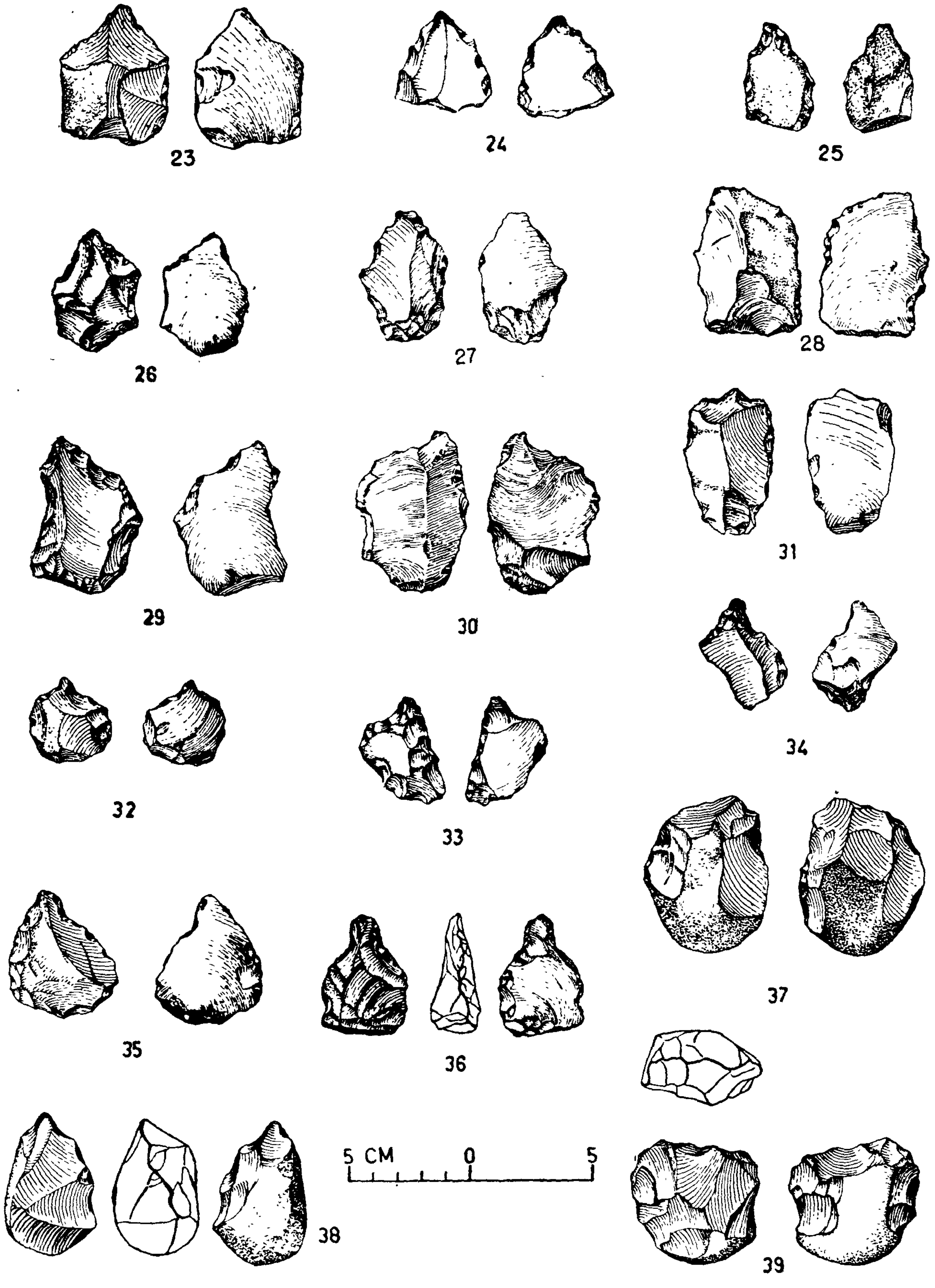

FIG. 7

13. Point

(i) Red Jasper. A sub-triangular flake point prepared on end flake. Partially retouched along the right and left margins from the undersurface. (Fig. 7, 28; Pl. VIII, 28).

(ii) Chert. A sub-triangular end flake having two working points. One near the tip as a point and another on the upper half of the right margin serving as an awl point. Undersurface almost plain. (Fig. 7, 26; Pl. IX, 26).

(iii) Quartzite. A simple flake point. Cortex retained on the left margin. (Fig. 7, 23; Pl. VIII, 23).

(iv) Chert. A triangular thick point worked along the two longer margins to produce a pointed tool. Cortex retained on its right half portion. Flat base and undersurface marginally retouched. (Fig. 7, 24; Pl. VIII, 24).

(v) Chert. A leaf shaped tanged point on end flake. Steeply worked all along the margin. (Fig. 7, 27; Pl. VIII, 27).

14. Point-cum-side-Scraper

Reddish Brown Jasper. A sub-triangular flake. Retouched along the right margin, left margin retains cortex. Near the flat distal end deep flakes removed in order to form awl working edge which is not prominent. (Fig. 7, 31; Pl. VIII, 31).

15. Awl Point

Red Jasper. Prepared on a small oval nodule. Near the tip there is a protruding small point, prepared by removing few flake scars. (Fig. 7, 32; Pl. VIII, 32).

16. Borer

(i) Banded Chert. A sub-triangular thick flake. Steeply flaked along the two sides to form a borer edge. (Fig. 7, 35; Pl. VIII, 35).

(ii) Brown Jasper. Prepared on a sub-triangular flake. Constricted near the tip. Secondary work done mainly near the constricted region to form a protruded border edge. (Fig. 7, 36; Pl. VIII, 36).

(iii) Deep Brown Jasper. Borer edge obtained by removing steep and shallow flakes along the right edge as well as by producing constriction along the shorter margin Central portion retains cortex. Undersurface shows a few flakes removed near the borer edge and its left margin. (Fig. 7, 35; Pl. VIII, 35).

(iv) Dark Brown Cherty Material Prepared on a small sub-triangular flat nodule. Steeply worked along the two longer margins to produce thick borer edge. (Fig. 7, 25; Pl. VIII, 25).

17. Borer-cum-Hollow Scraper

(i) Reddish Brown Jasper· Prepared on an irregular end flake The borer end prepared by working along one shorter and another longer margins to form

a beak shaped working edge. Undersurface along the left margin a few flake scars removed to form a hollow scraping edge. (Fig. 7, 34; Pl. VIII, 34).

(ii) Banded Chert. A broad irregular end flake with a notch on the left side, which is retouched. Undersurface fully flaked. Borer edge produced by removing a few deep and small flake near the tip. (Fig. 7, 30; Pl. VIII, 30)

(iii) Brownish Jasper. A sub-rectangular thick end flake. Borer edge obtained by removing a few flakes around the one shorter and another longer margin near the tip. Along the left margin deep flake scars removed making a hollow scraping edge. (Fig. 7, 29; Pl. VIII, 29).

19. Bifacial Chopper

(i) Quartzite. A small sub-roundish pebble alternately flaked along both sides to produce a sinuous pointed cutting edge. (Fig. 7, 37; Pl. VIII, 37).

(ii) Red Chert. A small bifacial chopper prepared on a sub-roundish nodule, but end retains cortex. (Fig. 7, 38; Pl. VIII, 38).

(iii) Brown Chert. Prepared on a small ovoid nodule bifacially worked to form a sinuous cutting edge Upper portion retains cortex Undersurface fully flaked (Fig 7, 39; Pl VIII, 39).

C. MESOLITHIC CULTURE

(i) General Observation

The Mesolithic tools were mainly from the 'Village Mound' and a few from the surface of the 'High Ground'.

The 'Village Mound' produced Mesolithic tools below the early historical deposit mainly from five cuttings—B1, ZB1, ZB2, ZB3, and ZB4 (See Fig. 28). The tools were found on the gravel and to a depth of 10-15 cm from the top of the gravel deposit which lies directly on the bed rock.

(ii) Tool Types

The total number of artefacts is only 53. The componentwise distribution of the tools is as follows : Blades (21), Points (13), Burin (1), flakes (8), Cores (10). The tools were mostly fashioned on silicious materials like chalcedony, agate, chert and a few on carnelian and quartz. The raw material was obtained from the exposed veins and pebbles from the high level gravel. The raw materialwise distribution is presented in Table II. It is evident from the table that blades account for 39·6% and points for 24·3% of the assemblage. It is also significant that flakes and tools made on flakes constitute nearly 50% of the collection from the site. The tendency towards flake-blade tradition is easily discernible.

The finds from excavation and surface collection revealed that the tools are similar to types and material recovered from different areas, and hence these have been dealt below together,

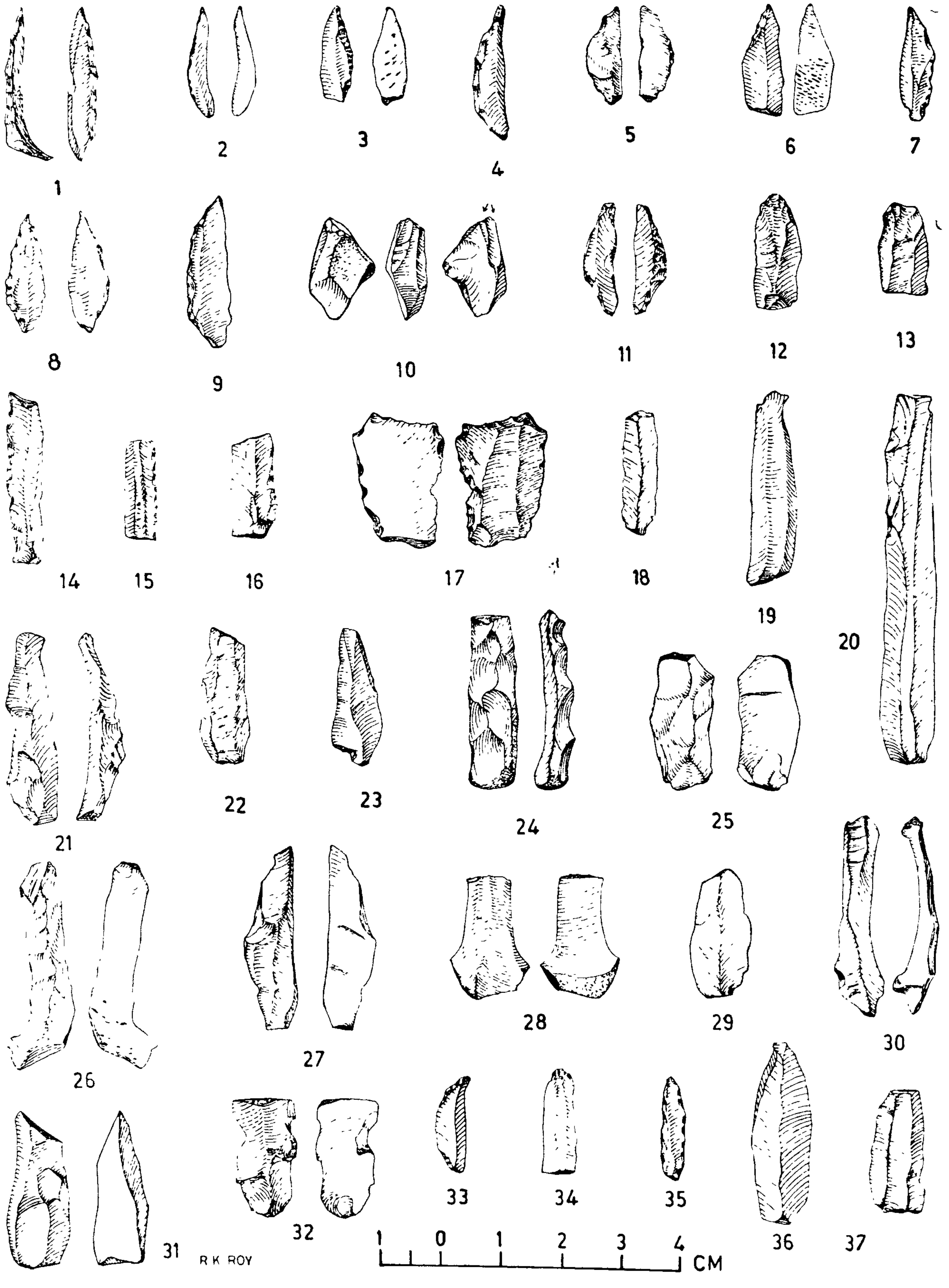
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Fig. 8

TABLE II

TYPOLOGICAL FREQUENCY CHART, MATERIALWISE

Type	Chert	Chalcedony	Carnelian	Quartz	Jasper	Agate	Total
1. Points	1	5	1	—	3	3	13
2. Blades	3	15	1	—	2	—	21
3. Burin	—	—	1	—	—	—	1
4. Flakes	1	6	—	1	—	—	8
5. Cores	1	2	—	1	2	4	10
Total	6	28	3	2	7	7	53

The selected specimens are described and illustrated below:

1. POINTS

(a) Chalcedony. A short irregular thin flake point steeply retouched along the crescentic margin. (Fig. 8, 2; Pl. IX, 2)
(b) Jasper. A short thick crescentic point worked along the chord. (Fig. 8, 4; Pl. IX, 4).
(c) Chalcedony. Same as No. 4. (Fig. 8, 5; Pl. IX, 5).
(d) Jasper. A simple thick flake point, without retouch (Fig. 8, 32; Pl. IX, 32).
(e) Chert. A thin short flake point. (Fig. 8, 33; Pl. IX, 33).
(f) Chalcedony. A short thin flake point worked along the right margin (Fig. 8, 35; Pl. IX, 35).
(g) Green Jasper. A simple flake point without retouch. (Fig. 8, 36; Pl. IX, 36).

(i) Points on Blades retouched on one side

(a) Chert. A thin short blade point retouched fully along thick right margin with a notch on left side. Proximal end in profile appears slightly curved. (Fig. 8, 1; Pl. IX, 1).
(b) Carnelian. A thick broad blade point retouched along the left convex edge. (Fig. 8, 8; Pl. IX, 8).

(ii) Tanged Point

Chalcedony. A short sub-triangular tanged point steeply retouched along the right edge. The illustrated specimen carries fine retouching from undersurface. (Fig. 8, 7; Pl. IX, 7).

(iii) Points on Crescentic Blades

(a) Agate. A long blade point steeply retouched along the crescentic edge. (Fig. 8, 9; Pl. IX, 9).

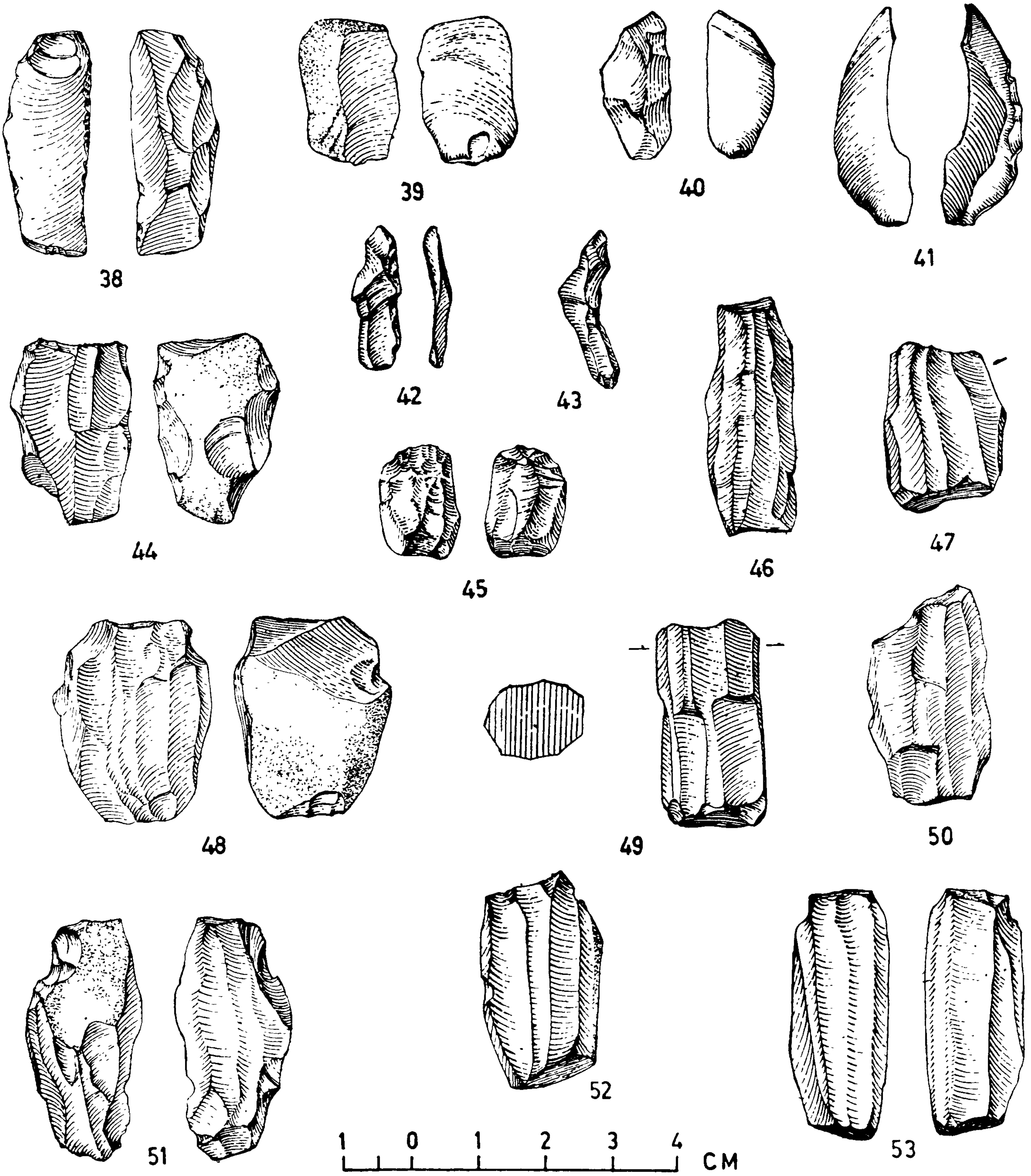

FIG. 9

(b) Chalcedony. A crescentic point retouched along chord. Use-marks on the right edge. (Fig. 8, 2; Pl. IX, 2).

(iv) Points on Sub-triangular Flakes

Chert. A sub-triangular short thick flake point slightly blunted near the left margin (Fig. 8, 6; Pl. IX, 6).

2. BLADES

(i) End Scraper on Blade

(a) Chalcedony. Prepared on a short blade. Retouched near the tip forming an end-scraper. (Fig. 8, 12; Pl. IX, 12).

(b) Quartz. A short cylindrical fluted core worked all around with secondary retouch in the front forming a convex scraping edge. (Fig. 9, 45; Pl. X, 45).

(ii) Blades Blunted on one straight edge

(a) Chalcedony. A short parallel sided blade with retouch along the right margin. (Fig. 8, 15; Pl. IX, 15).

(b) Chalcedony. A short parallel sided blade blunted along the right margin, tip broken. (Fig. 8, 16; Pl. IX, 16).

(c) Carnelian. Prepared on a thick flake blade, irregular nibbling along the left margin with working at the distal end. (Fig. 8, 17; Pl. IX, 17).

(d) Chert. A long parallel sided blade. (Fig. 8, 20; Pl. IX, 20).

(e) Chalcedony. A short flake-blade partially retouched near the bulbar end with a broken base. (Fig. 8, 34; Pl. IX, 34).

(f) Jasper. A long flake-blade. Left side straight with retouch from under surface. Right side is slightly convex. Proximal end thinned. (Fig. 9, 38; Pl. X, 38).

(iii) Penknife Blades

(a) Chalcedony. A short penknife on a flake retouched along the right side, with a snapped base. (Fig. 8, 3; Pl. IX, 3).

(b) Chalcedony. A penknife on blade blunted along the left margin. (Fig. 8, 14; Pl. IX, 14).

(iv) Simple unretouched Blades

(a) Chalcedony. A simple blade. Cortex retained along the left margin. (Fig. 8, 13; Pl. IX, 13).

(b) Chalcedony. A short parallel sided blade with a medial ridge without retouch; the sides show use marks. (Fig. 8, 18; Pl. IX, 18).

(c) Chert. A long blade without retouch, trapezoidal cross section. (Fig. 8, 19; Pl. IX, 19).

(d) Chalcedony. A short blade without retouch, end broken. (Fig. 8, 22; Pl. IX, 22).

(e) Chalcedony. A short flake-blade without retouch. (Fig. 8, 23; Pl. IX, 23).

(f) Chalcedony. A thin broad flake-blade without retouch. (Fig. 8, 37; Pl. IX, 37).

(g) Chalcedony. A short simple flake-blade, cortex retained on the left side. (Fig. 9, 39; Pl. X, 39).

(v) Notched Blade

(a) Chert. A short notched flake-blade. (Fig. 8, 31; Pl. IX, 31).

(vi) Blades with crested ridge.

(a) Agate. A long flake-blade with plain under surface, upper surface carries alternate flaking along the medial ridge. An example of crested ridge. (Fig. 8, 21; Pl. IX, 21).

(b) Chalcedony. A long flake-blade with plain undersurface and crested medial ridge on top. The illustrated specimen shows cortex retained at the base. (Fig. 8, 24; Pl. IX, 24).

(c) Red Jasper. Simiar to No. 24 but short in size. (Fig. 8, 25; Pl. IX, 25).

(d) Carnelian. A long flake with truncated base. Alternate flaking along the medial ridge indicating crested-ridge techniuue. (Fig. 8, 26; Pl. IX, 26).

3. FLAKES

(a) Agate. A simple flake with straight thin right edge without retouch. (Fig. 8, 27; Pl. IX, 27).

(b) Chalcedony. A short simple flake, cortex retained near the left top. (Fig. 8, 29; Pl. IX, 29).

(c) Chalcedony. A short flake without retouch, upper half obliquely snapped. (Fig. 9, 40; Pl. X, 40).

(d) Chert. An irregular long oblique flake with flake scars along the arc. (Fig. 9, 41; Pl. X, 41).

(e) Chalcedony. A short irregular flake without retouch. (Fig. 9, 42; Pl. X, 42).

(f) Chalcedony. A short asymmetrical waste flake without retouch. (Fig. 9, 43; Pl. X, 43).

(i) Rejuvenated Flakes

(a) Chalcedony. A short rejuvenated flake without retouch, cortex retained near the truncated base. (Fig. 8, 28; P. IX, 28).

(b) Milky Chalcedony. A long rejuvenated flake with truncated base. (Fig. 8, 30; Pl. IX, 30).

4. CORES

(i) Cores with single platform.

(a) Chalcedony. A short core on nodule with a prepared platform at the top. Half of the portion shows a few blade scars, rest retain cortex. (Fig. 9, 44; Pl. X, 44).

(b) Agate. A long partially flaked cylindrical core on a nodule with a platform on the top. (Fig. 9, 46; Pl. X, 46).

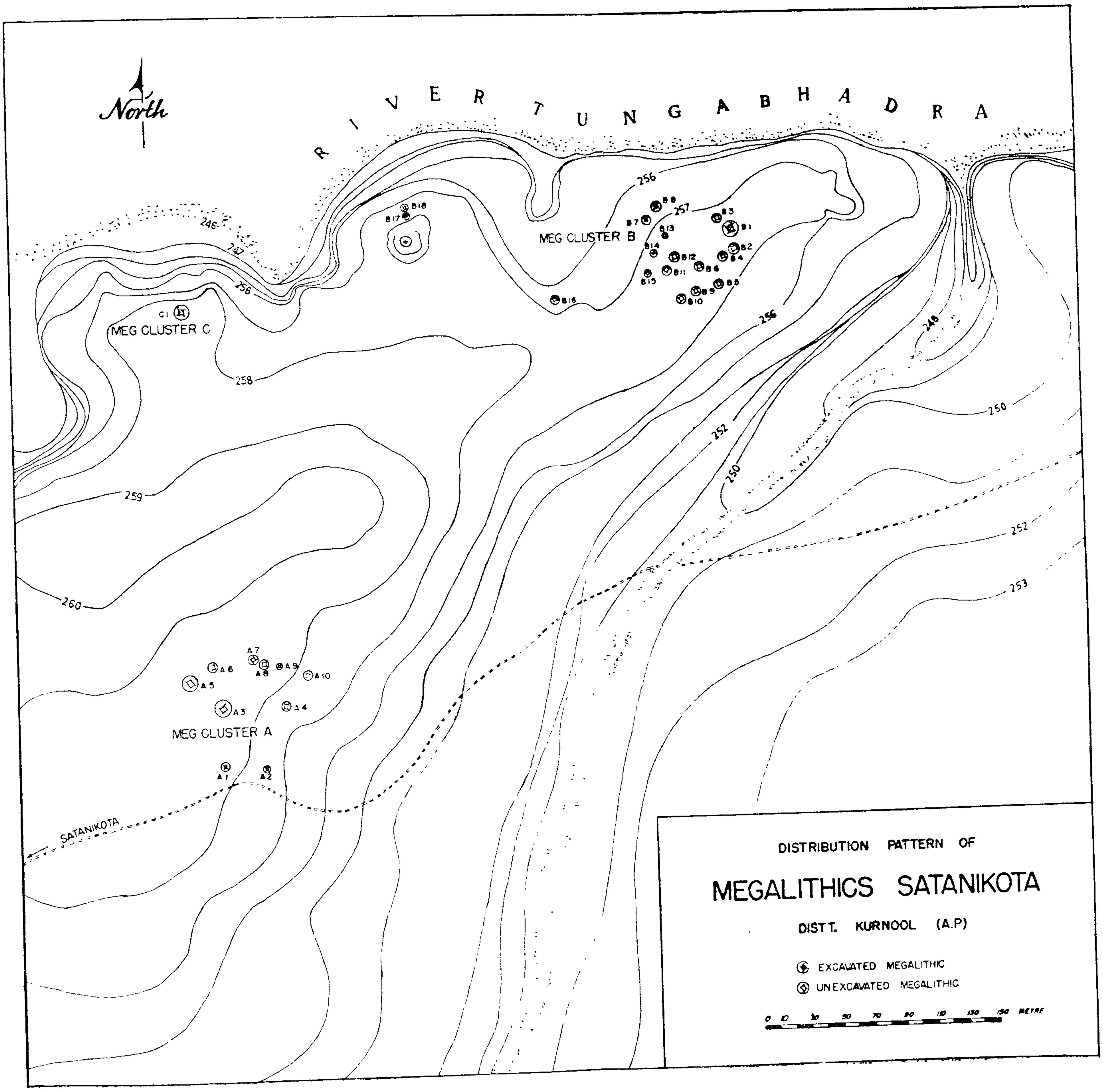
North
RIVER TUNGABHADRA
MEG CLUSTER A
MEG CLUSTER B
MEG CLUSTER C
SATANIKOTA
DISTRIBUTION PATTERN OF
MEGALITHICS SATANIKOTA
DISTT. KURNOOL (A.P)
EXCAVATED MEGALITHIC
UNEXCAVATED MEGALITHIC
METRE

FIG. 10

(c) Chalcedony. A broad fluted core with single platform and partially retaining cortex at the back. (Fig. 9, 48; Pl. X, 48).

(d) Brown Chert. A single platform cylindrical core on nodule partially worked. (Fig. 9, 50; Pl. X, 50).

(e) Agate. A long cylindrical core on nodule. A part of cortex retained. (Fig. 9, 51; Pl. X, 51).

(f) Jasper. A tabular fluted piece partially flaked. (Fig. 9, 52; Pl. XI, 52).

(g) Chert. A long fluted cylindrical core with single platform fully flaked. (Fig. 9, 53; Pl. X, 53).

(ii) Cores with double platform.

(a) Chalcedony. A cylindrical core with double platform. Three-quarter portion with bed scars. (Fig. 9, 47; Pl. X, 47).

(b) Agate. A cylindrical fluted core with double platform. Fully flaked. (Fig. 9, 49; Pl. X, 49).

5. BURIN

Carnelian. Prepared on a short sub-triangular residual core, the burin edge is formed by removing one oblique spall on the left and by two flakes on the right forming a chisel edge. (Fig. 8, 10; Pl. IX, 10).

IV. MEGALITHIC CULTURE

A. INTRODUCTION

The megalithic culture at Satanikota was represented by a number of burial tombs of different types and sizes scattered in three clusters (Pl. IV), in an approximate area of 10 hectares on the right bank of the River Tungabhadra about 2·8 km east of the village. Of the three clusters, numbered A, B and C, Cluster A, (Pl. XI), characterised by ten comparatively intact Cist-with-Passage type megaliths, was 400 m south of the river bank, while Clusters B and C, characterised by Pit-Circle and Cist-Circle type megaliths, were along the bank, Cluster B being 150 m east of Cluster C and 400 m north-east of Cluster A. Thus, the three clusters roughly formed a triangle on plan (fig. 10). It is interesting to note that except Meg. B XVII, which was in Cluster B, all the megaliths belonging to Type I were in Cluster A, all the three types in Cluster B, and only one type, i.e. Type II in Cluster C. In this connection, it is worthwhile to note that while the megaliths situated south of the River Krishna are dominated by Cist-with-Passage, Pit-Circle and Cist-Circle types, the megaliths north of the Krishna are dominated solely by Stone-Circle (Pit-Circle) type. For example, at Malleswaram (70°20′ E; 16°2′ N), situated just on the northern bank of the Krishna, two groups of megalithic tombs consist exclusively of Stone-Circle type while on the southern bank of the Krishna, near Kudavelli a vast field consists of hundreds of Cist-with-Passage type of burials.

Unlike Brahmagiri megaliths in Karnataka and a few Najarjunakonda megaliths in Andhra Pradesh whose orientation was east-west, all the megaliths at Satanikota like those of Gajjalakonda in the same district were oriented north-south.

In the construction of all the megaliths, except Megalith C I which is a Pit-Circle surrounded by large granite boulders, the easily and abundantly available Cuddapah stone slabs were used both for circles and for orthostats. As regards the use of granite boulders for the Stone-Circle, it is not completely a new trait, for some of the megaliths in wholly lateritic area have granite stones while those in granite area have lateritic circle stones in Tamil Nadu and Karnataka. The use of the stones not locally available in the construction of some of the megaliths might be due to 'ritualistic or traditional warranty'.[1]

Although the megaliths at Satanikota were built on pebbly ground (high level gravel) which might have been a waste and uncultivable land during the megalithic period, the introduction of the K. C. Canal in A.D. 1871 made the modern cultivators reclaim even this land for agriculture. During this process many megaliths were destroyed and levelled. Fortunately, out of some fear or superstitious considerations, some megaliths were left intact with or without any superficial damage. Thus, in such an extensive area only 29 megalithic burials hemmed in by groundnut fields could survive.

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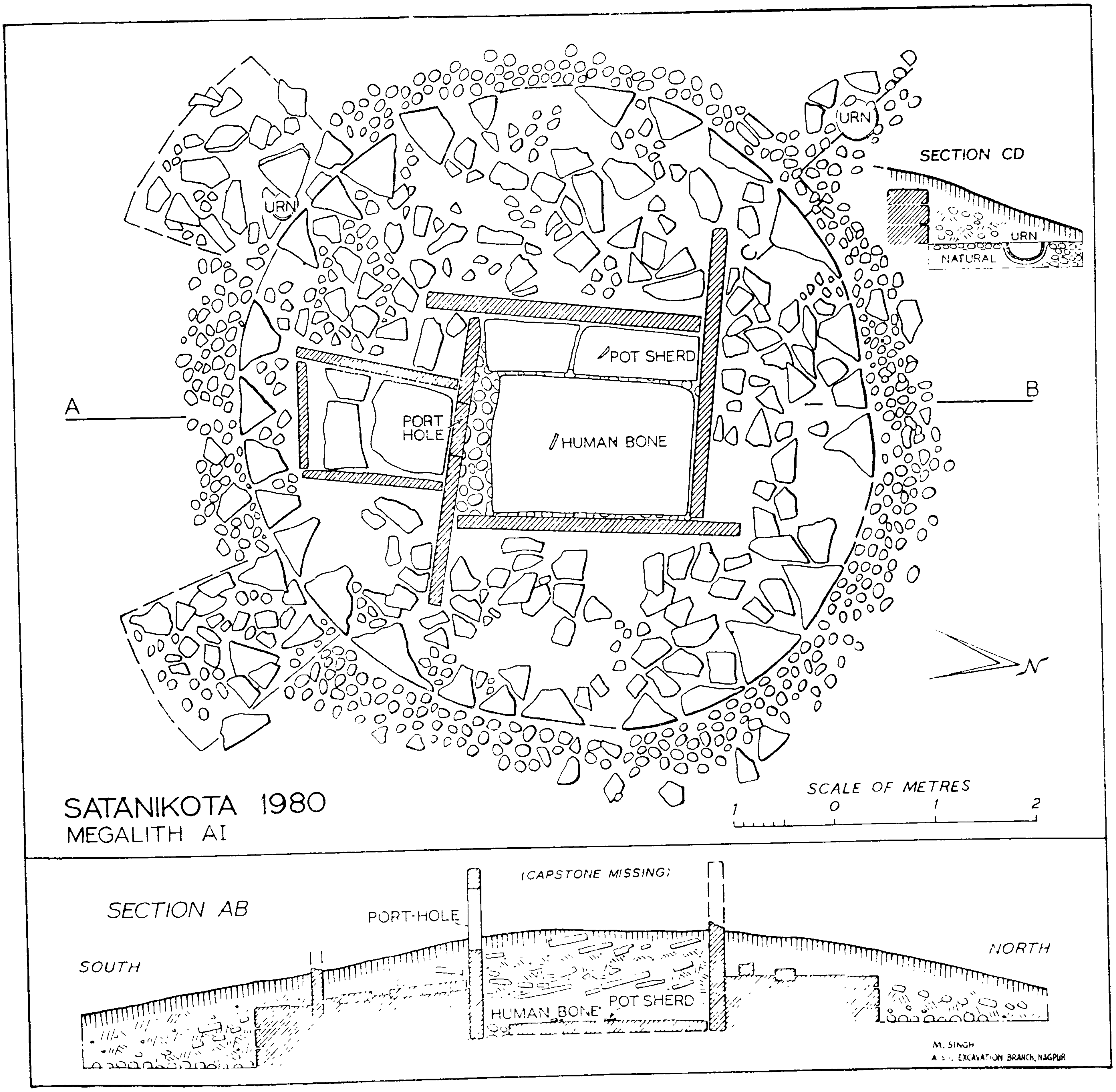
[1] Ramachandran, K. S., *Archaeology of South India-Tamil Nadu,* (Delhi 1980), p. 46,



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URN
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NATURAL
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D
PORT HOLE
POT SHERD
HUMAN BONE
N
SATANIKOTA 1980
MEGALITH AI
SCALE OF METRES
1 0 1 2
(CAPSTONE MISSING)
SECTION AB
PORT-HOLE
SOUTH
NORTH
HUMAN BONE
POT SHERD
M. SINGH
A.S.I. EXCAVATION BRANCH, NAGPUR

Fig. 11

B. CLASSIFICATION

In making the classifying of the megaliths at Satanikota, classification adopted by V. D. Krishnaswamy[1] has been broadly followed. However, taking into consideration the architectural variation of the megaliths at Satanikota over those of Tamil Nadu, the nomenclature used here is slightly different but clear and self-explanatory. This classification is done on the basis of architectural features found on the surface as well as in the course of excavation. Thus the megaliths at Satanikota are divided into three types, viz. Cist-with-Passage, Pit-Circle and Cist-Circle. Type I and III are comparable to variant IV of the 'Chamber Tombs' type and Type II to that of variant VI of the 'Unchambered Burials' type of Sundara's classification.[2]

Type I : Cist-with-Passage

It is represented by cist with passage. The orthostats of the cist are arranged in such a manner that each orthostat projects laterally at one end from the other, forming clockwise or contraclockwise swastika on plan and thus preventing internal collapse of the orthostats. The passage leading to a porthole in the southern orthostat is flanked by two slabs and closed in front by another fixed vertically in the ground. Externally, the cist and the passage are surrounded by cairn packing made up of earth and slab pieces. In turn, the cairn packing is encircled by a low wall of multiple-coursed and dressed or semi-dressed slab pieces. Finally, the entire structure is surrounded by river-borne pebble packing. Thus, this megalith appears like a hemispherical low mound. Occasionally, megaliths of this type have low platforms built of slab pieces, abutting the circle externally on different directions. Invariably the capstones are missing. This type had two variants at the site.

Variant A—nontransepted cist with nontransepted passage, e.g. AI, AIII, AIV, AVI, AVII, AVIII, AIX, AX and BXVII.

Variant B—Transepted cist with transepted passage,[3] e.g. AII and AV.

Of these, only AI, AIII and BXVII from Variant A, and AII from Variant B were excavated.

Type II : Pit-Circle

This type is represented by pit-circle, The pit is either circular or elliptical on plan with tapering sides and containing the grave goods at the bottom or the filling deposit made up of earth, stone slabs and pebbles, and surrounded by either roughly hewn big granite boulders or semi-dressed multiple-coursed limestone slab-circle with an outer ring of upright slabs and pebble packing in between. It had three variants at the site.

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[1] *Ancient India,* No. 5, pp. 43-44.

[2] Sundara A., *The Early Chamber Tombs of South India,* (Delhi 1975). p. 157.

[3] It is significant to note in this connection that this type of megaliths do not have any transeption in the passage although they have in the chamber/cist elsewhere. See Narasimhaiah, B. *Neolithic and Megalithic Cultures in Tamil Nadu,* (New Delhi, 1980), p. 111 and 138.

Variant A—Pit-Circle bounded by roughly hewn granite juxtaposed boulders, e.g. CI.

Variant B—Pit-Circle bounded by semi-dressed multiple coursed limestone slabs surrounded by upright stone slabs, e.g. BI, BV, BVI, BIX ,BX, BXI, BXII, BXIV, BXV and BXVI.

Variant C—Pit-Circle with Passage-similar to Variant B but with an addition of a passage formed by two orthostats on the southern side, e.g. BII, BIII, BIV, BXIII.

Of these megaliths belonging to this type, only CI and BI representing respectively Variant A and Variant B were excavated.

Type III : Cist-Circle.

This type is represented by cist-circle, the cist being oblong and north-south oriented. Western and eastern orthostats project laterally from the northern and southern orthostats. The cist is provided with a floor-slab. No port-hole was found in any of the examples. The rubble and earth packing surrounding the cist is bound by multi-coursed semi-dressed slab-circle, the outside of which is packed with pebbles. In the absence of any evidence it could not be said that the cist had capstone. Among the megaliths excavated megaliths B-VII and B-VIII represent this type.

C. DESCRIPTION OF THE EXCAVATED TOMBS

As stated above out of 29 intact megaliths only 8, representing all the three types and their varieties except Variant C of Type II were taken up for excavation in order to study the architectural details and the contents each tomb of, and to find out whether this study would throw any new light on the social, economic and religious life of the megalithic people of the Andhra Region in particular and South India in general. All the megaliths except BVII were dug in quadrant method.

The description of each of the excavated megalith is as follows :

Megalith AI (Fig. 11, Pl.XII):—this was the southern most megalith in the site and situated nearly 400 m away from the southern bank of the River Tungabhadra and is the first one to be encountered by a person coming from Satanikota village. Typologically this tomb belonged to Variant A of Type I. The excavation revealed an almost elliptical pit dug into the then ground level. Four limestone slabs, each measuring approximately 2·80 m long 1·25 m. wide and 15 cm thick, brought from a near by quarry, were placed laterally in an anti-clockwise swastika pattern so as to arrest the inward collapse of the slabs. The cist thus formed measured internally 1·09 (north-south) × 1·80 m (east-west). The cist was narrower at the bottom and broader at the top. The floor of the cist was paved with two stone slabs. The passage formed by the laterally placed three smaller orthostats attached to the southern orthostat of the cist measured internally 1·45 m long (north-south) and 0·90 m and 1·45 m wide at the northern and southern ends respectively. Connecting the passage with the cist was a circular porthole, 0·60 m in diameter, made into the eastern half of the southern orthostat of the cist at a height of 0·75 m from the

floor-slab of the cist. The inside of the passage was also paved with small stone slabs. This pavement was encountered at a depth of 25 cm from the lower edge of the porthole.

This whole structure, i.e. the cist and the passage, was given rubble earth and stone slab support from outside surrounded by a well dressed limestone slab circle with a diameter of 6·30 m. The circle revealed three extant courses. In the lower two courses comparatively thick and heavy blocks (approximately 15 cm thick) were used. These stone blocks were cut in triangular shape with an outside curvature in such a fashion that when they were arranged side by side guided by the curvature of each stone they formed a perfect circle. To maintain one level throughout, stone chips were placed between the courses below the joints. The circle was then given pebble and earth support from outside, thus enlarging the circle's diameter to 7·90 m.

Two platforms built of stone slabs were found attached to the stone slab circle in south-eastern and south-western directions. The south-eastern platform measured 1·67 m long and 1·03 m and 1·50 m wide respectively at the northern and southern ends, while the south-western platform measured 1·42 m long and 1·38 m and 2·00 m wide respectively at northern and southern ends. The south-western platform revealed two pots, in coarse red ware, one vase and the other lid-cum-bowl containing many small and disintegrated bones.

The filling of the cist consisted of brownish earth mixed with pebbles and stone slabs. Only a 15 cm long human fibula, a pre-molar tooth and other bone pieces and a vase in coarse red ware with only rim portion were found placed on the floor-slab of the cist. From the filling, at a depth of 50 cm, a shell bangle piece was also found in the cist.

This megalith surprisingly yielded neither Black-and-red ware pottery nor any metal objects. The absence of antiquities may be due to the fact that in later times this megalith was reopened and was carefully filled after taking away the grave goods.

The filling of the passage consisted of the same material as that of the cist, but it yielded nothing. However, a stone block near the porthole, most probably belonging to the door slab of the porthole, was encountered in the passage.

Megalith XII (Fig. 12, Pl. XIII and XIV):—This megalith typologically belonged to variant B of Type I. Of all the megaliths at Satanikota this tomb was the most impressive and the largest one with a rectangular cist measuring internally 2.50 m (north-south) and 2·90 m (eastwest). Two laterally arranged septa divided the cist into three chambers—A, B and C, measuring internally 2·50 m × 0·60 m; 2·50 m × 1·30 m and 2·50 m × 0·80 m respectively. The portholes cut longitudinally into the southern end of each septum, one with 1·70 m diameter and the other with 0·70 m diameter were functional and provided access from one chamber to the other. On the southern orthostat of the cist was a porthole measuring 0·66 m in diameter opening into the central chamber. Only chambers B and C had closely fit floor-slabs at a depth of 1·76 m and 1·86 m respectively. In this connection, it is noteworthy to mention that the Brahmagiri megaliths had their cists erected on the floor-slabs whereas, in the Satanikota megalithic cists orthostats were erected first and then the floor-slab was fitted into the cists. The passage attached to the cist measuring 2·50 m × 1·40 m internally was compartmented by a north-south running septum. The floor of the passage

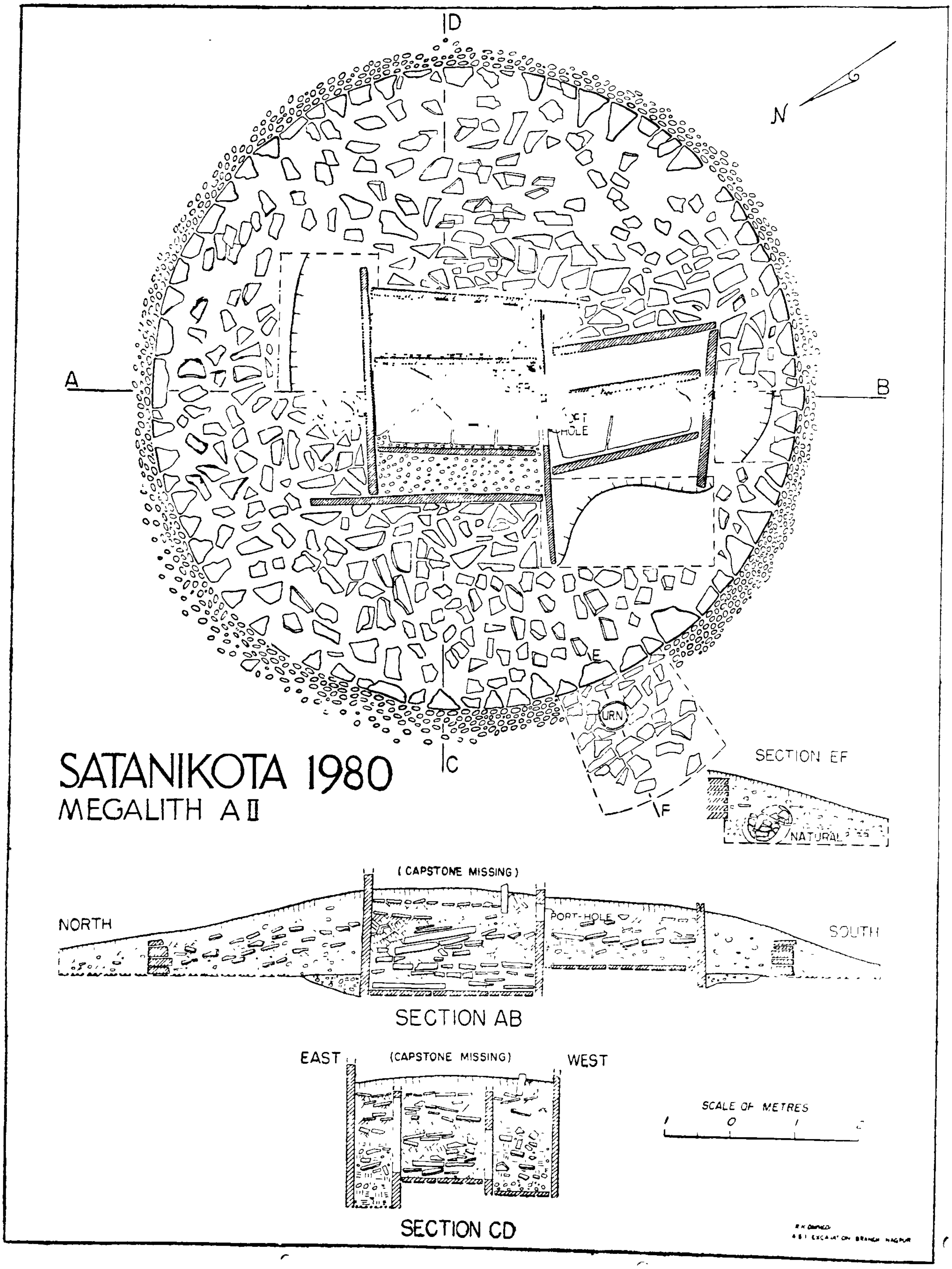

SATANIKOTA 1980
MEGALITH A II
D
N
A
B
C
E
F
URN
HOLE
SECTION EF
NATURAL
(CAPSTONE MISSING)
NORTH
PORT-HOLE
SOUTH
SECTION AB
EAST
(CAPSTONE MISSING)
WEST
SCALE OF METRES
SECTION CD

FIG. 12

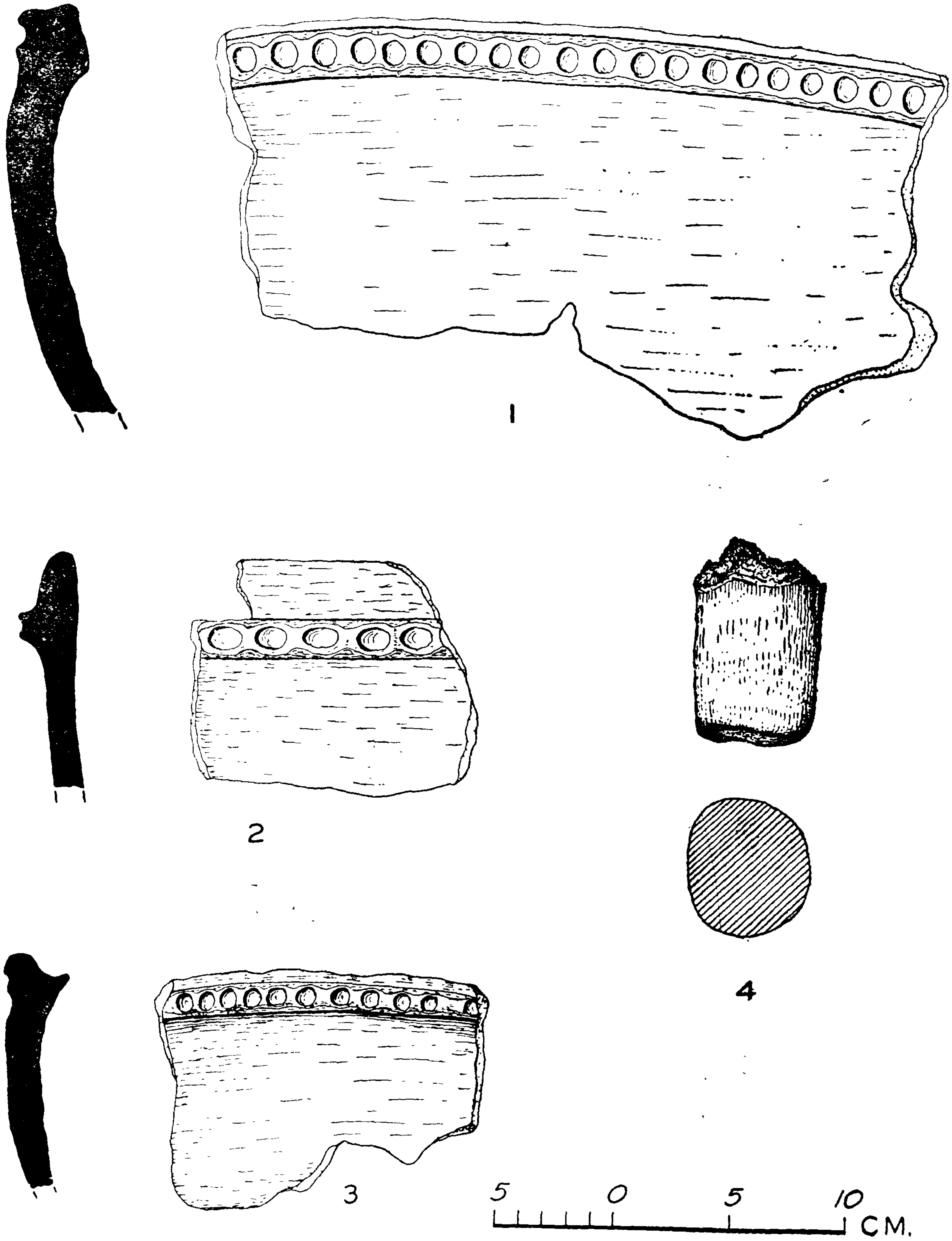


Fig. 13

was paved with stone slabs. Unlike Megalith AI, the arrangement of the orthostats of the cist in Meg. AII was of clockwise and swastika pattern.

Both the cists and the passage were given pebble, earth and stone-slab support from outside and surrounded by well dressed triangularly cut stone-slab circle. This circle measured 10 m in diameter with an additional 2 m pebble packing all along from outside. Below the pebble packing a stone-slab built platform adjoining the circle was encountered in the south-western quadrant. Under this platform was found a jar covered with a red ware, externally decorated with herring-bone pattern, pot inversely placed (pot of red ware decorated externally with herring-bone design and kept inverted). Except a few small stone-slabs it contained neither antiquities nor any skeletal remains.

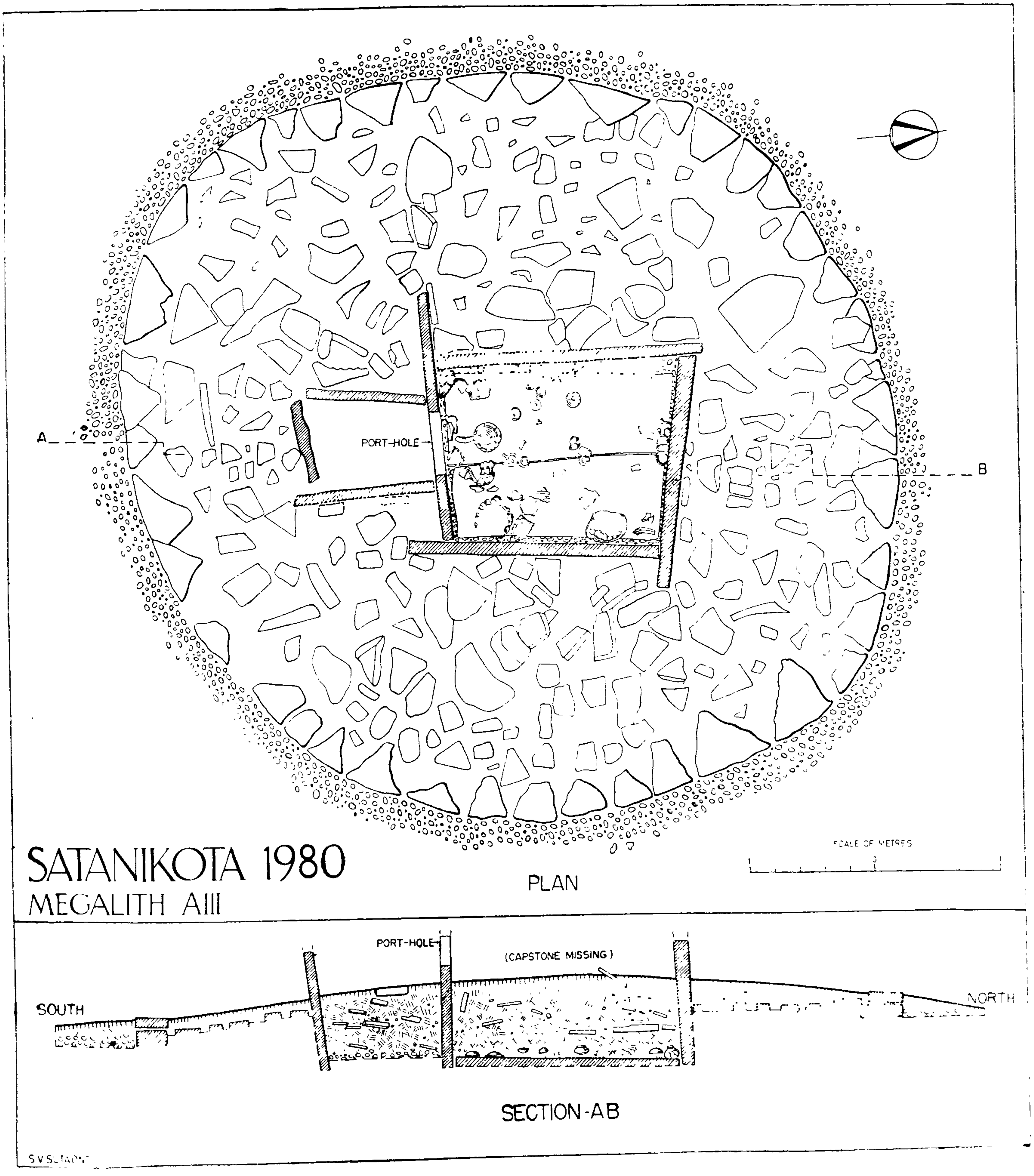
As this megalith was opened and plundered earlier, only fragmentary human and animal bone pieces were encountered in the cist and the passage. The stone-slab, pebble and the brown soil filling of the cist and the passage yielded terracotta horn, one shell fragment and a small round bronze rattle with human face design on one side.

As regards pottery this megalith yielded some sherds and pots representing Black-and-red Ware, Red Ware and Black Ware comprising various sizes of vases, bowl and lid types. Fragments of a terracotta legged sarcophagus (Fig. 13, 2), were noticed in the filling of the cist. By this it is obvious that originally a sarcophagus containing grave goods was kept on the floor-slab of the cist.

Megalith AIII (Fig. 14, Pls. XV) :—It lies about 30 m to the north-west of megalith AII. The cist, built in clockwise swastika pattern and internally 1·70 m (north-south), × 1·40 m (east-west), contained nearly 30 small pots, some in inverted position and kept on the floor-slab at a depth of 0·90 m from the top-most point of the extant orthostat. The surrounding stone-slab circle measured 6·10 m internally and 6·60 m externally. The pots representing globular vessels, small to medium size lid-cum-bowls and small bowls in Black-and-red Ware, dull red ware and red slipped ware contained human and animal bone pieces. Besides, some fragmentary portions of sarcophagus (Fig. 13, 1, 3 & 4) were also encountered in the cist. The passage attached on the southern side of the cist and connected to it by a port-hole of 0·51 m diameter measured internally 0·95 m (north-south) × 0·68 m (east-west). It was not paved and yielded only one bowl in black ware.

Megalith BXVII (Fig. 15, Pl. XVI to XX) :—It belonged to variant A of Type I. The cist formed in a clockwise swastika pattern and measured internally 1·70 m (north-south), × 1·12 m (east-west). The closely fit floor-slab in the cist was encountered at a depth of 0·88 m. Of the five skulls and long bones, two human skulls and the skeletal remains of a small carnivorous animal, a small hollow based iron arrow-head and a few potsherds were found in the pebble and compact brown soil filling, while the other two human skulls without mandibles and some long bones were found on the floor-slab of the cist. The placement of the skulls, long bones and the mandibles at different places in the cist seems to be deliberate.

The passage attached to the southern orthostat of the cist was gradually narrowed at the southern end and measured internally 1·50 m (north-south), × 0·94 m (east-west),



SATANIKOTA 1980
MEGALITH AIII
PLAN
PORT-HOLE
A
B
SCALE OF METRES
PORT-HOLE
(CAPSTONE MISSING)
SOUTH
NORTH
SECTION-AB

Fig. 14

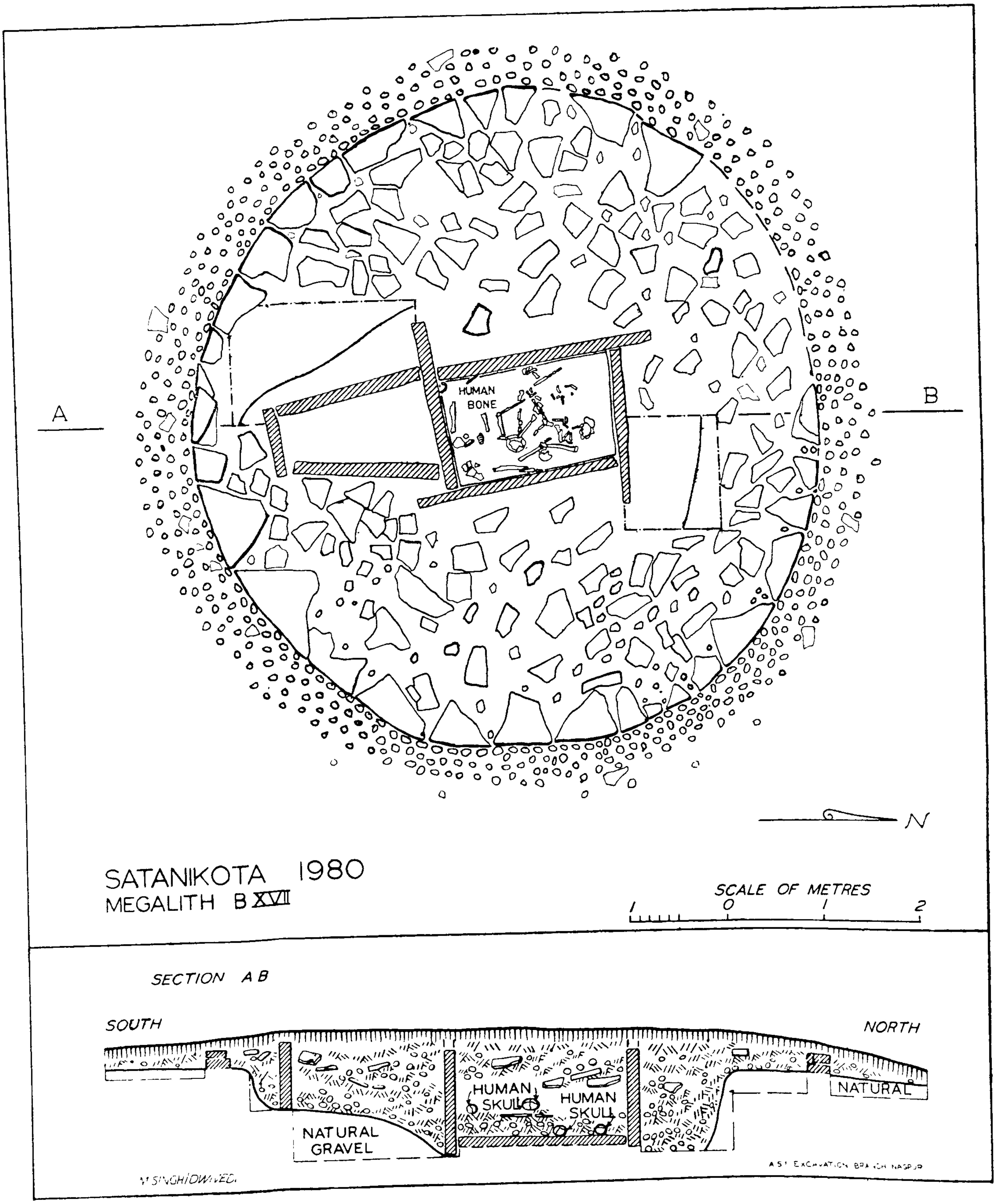

HUMAN
BONE
A
B
N
SATANIKOTA 1980
MEGALITH B XVII
SCALE OF METRES
1 0 1 2
SECTION AB
SOUTH
NORTH
NATURAL
HUMAN
SKULL
HUMAN
SKULL
NATURAL
GRAVEL

FIG. 15

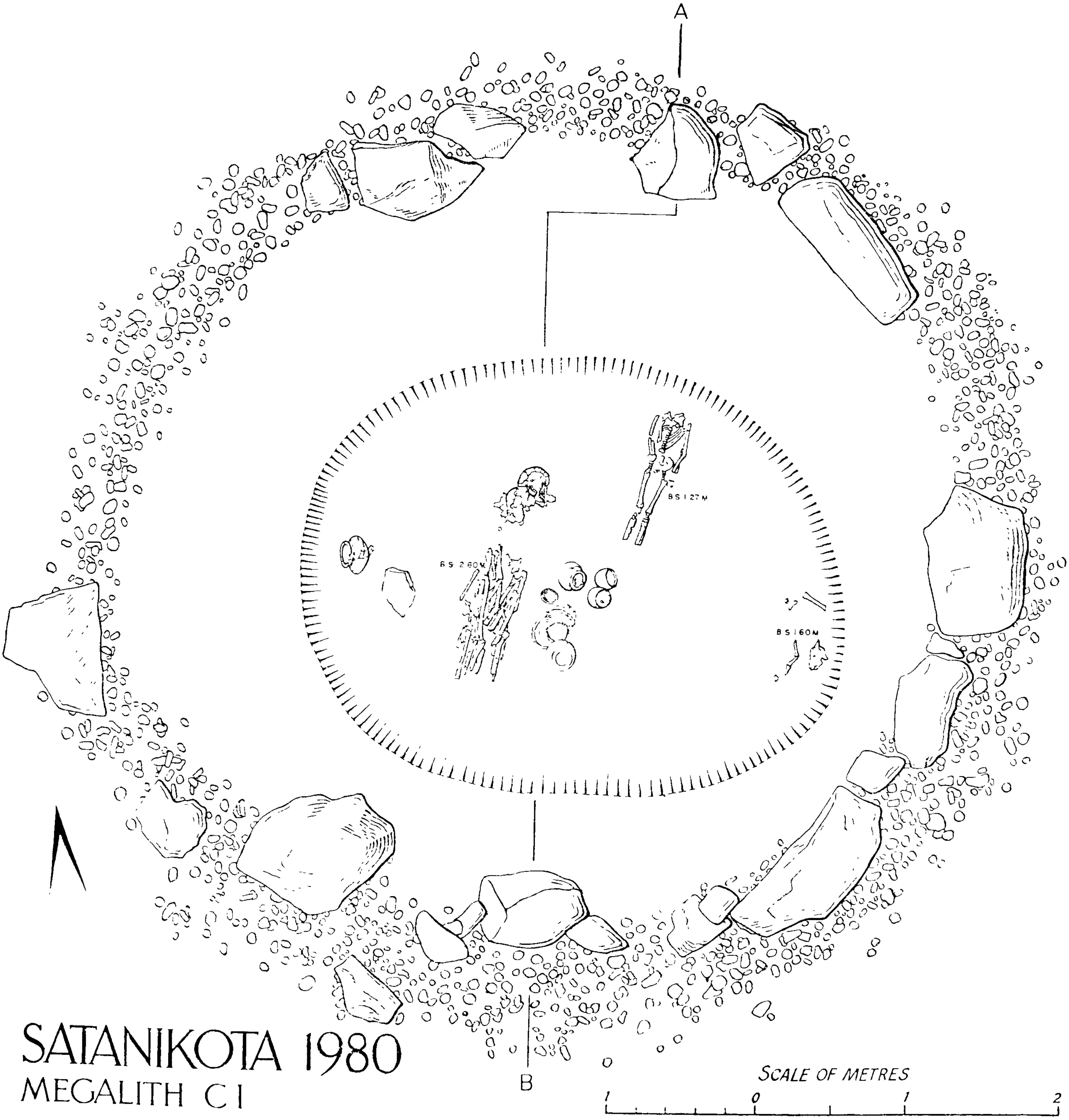

A
B.S. 1.27 M
B.S. 2.60 M
B.S. 1.60 M
B
SATANIKOTA 1980
MEGALITH C I
SCALE OF METRES
1
0
1
2

FIG. 16

at the northern end and 0·47 m (east-west), at the southern end. This was unpaved. Fragments of human hip bone and a rib portion along with two potsherds were encoundered in the passage on a stone-slab lying above the pebble and brown soil filling just 20 cm below surface. As the orthostats were broken, no traces of porthole could be found. Pottery found in the cist and the passage was of dull red ware and red ware and represented by big and miniature vase types only. On the face of one of the bounding stone-slabs of the southern segment of the circle, a shallow pecking forming a wavy design was noticed. In the present state of our knowledge its significance cannot be known (Pl. XVI).

Megalith CI (Figs. 16 & 17; Pl. XX) :—This megalith belonged to Variant A of Type II. Internal diameter of this megalith, which was surrounded by roughly hewn big granite boulders, measured 5·50 m while the external diameter including the outside pebble packing was of 6·80 m. At a depth of 2·60 m the bottom of the pit rested on the high level gravels. A thin layer of ash was spread on it to receive the excarnated skeletal remains belonging to two persons. The skeletal remains were kept roughly in an articulated position in north-south orientation. (Pl. XXI). Before the skeletal remains were kept, four pots including three bowls and one solid conical lid—all in black ware with a fine slip were kept near the head. It is noteworthy that except the vases, bowls, dishes and the lids in red ware, black ware and Black-and-red Ware, all but one were found on the eastern side and not a single metal object was found either in association with the skeletal remains or in the filling materials. After covering the grave goods with greyish alluvial loose soil to a thickness of nearly 1 m from the bottom, an articulated skeleton of a ram or goat was placed in south-north orientation with its head towards south on anash-bed in the south-eastern quadrant (Pl. XXII). The filling was again continued with same greyish alluvial earth to a height of 33 cm over which was found a north-south oriented human skeleton belonging to a teenager (girl ?), without its upper and lower extremities (Pl. XXIII). This skeleton was also covered with the same king of earth without any grave goods. Thus, the greyish alluvial soil filling was done upto the lower edge of the circle-stones. The megalith was finally packed with lime-stone slabs and earth. In later times the megalith was opened at the centre by removing the filling to a depth of 1·70 m in order to fill it with black compact soil with a few river borne pebbles. This later filling might be connected with some ritual. The presence of two skeletons one human and the other of an animal in the filling in two different levels and away from the centre is most noteworthy. There are instances from the Vidarbha megaliths—Janapani,[1] Khapa[2] and Mahurjhari[3]—in Maharashtra and from Nagarjunakonda[4] megaliths in Andhra Pradesh where the animal remains, expecially, horse in the former region and the bovine animal in the latter, were present in the megaliths (all are pit-circles/stone-circles), along with human skeletal

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[1] *Indian Archaeology*, 1961-62, *A Review*, p. 33 (Meg. I).

[2] Deo, S. B., *Excavations at Takalghat and Khapa*, (Nagpur 1970), p. 61.

[3] Deo, S. B., *Mahurjhari Excavation* 1970-72, (Nagpur 1973), p. 73 ff. (Meg. 2 in Locality I, Meg. 1 in Locality II and Megs. 4 and 9 in Locality III).

[4] Subrahmanyam, R., *Nargarjunakonda* 1954-60, (New Delhi 1975), pp. 177-78.

remains. These were attributed to sacrificial animals, sacrificed on the death of a person and buried along with them.[1] These were always buried either away from the human skeleton or above it and separated by an earth filling. The sacrificed animals buried in the megaliths are not associated with any grave goods such as pottery, iron objects or beads along with them. Secondly, the skull of the sacrificed animal may or may not bear the cut-marks if its head portion is present and articulated. In some cases the sacrificed animals were represented by one or two bones of their skeletons.

Therefore, if we examine the presence of the human and animal skeletons in the megalith above and away from the original grave goods in this light, it can be assumed that an animal (goat ?), was sacrificed first and buried after the original grave goods were kept on the floor of the pit and filled to some height. This sacrifice was followed by a human sacrifice in which a teenage person's head and feet were cut and buried. That is why these skeletons were more intact and well articulated suggesting the nature of their primary burial. Finally, as these skeletons were of sacrificial beings, no grave goods were found associated with them. This practice of human sacrifice (?) throws a new light on the religious practice of the megalithic people.

Megalith B I (Figs. 18 & 19):—This belonged to Variant B of Type II and situated nearly 200 m east of Megalith BXVII and only 20 m south of the right bank of the River Tungabhadra. This megalith with an internal diameter of 9·85 m was erected on a low natural mound. Except some medium sized limestone slabs which were kept with intermittent gap on the decomposed rock bottom of the oval pit in north-south direction and 7 pots (6 in red ware and one in black ware) of which 2 bowls were kept in an inverted position, nothing has been found either in the form of antiquity or as skeletal remains (Pl. XXIV). On the northern edge of the pit a stone-slab built ramp was provided to have an easy access to the pit from the then ground level. Of all the things the mode of filling of the pit of this megalith was more interesting. It contained three stages. In the first stage the pit was filled with brownish loose soil. In the second stage the first filling was cut into 'U' shape which was lined with overlapping stone slabs and filled with black sticky clay, which was again cut in 'V' shape in the third stage and lined with overlapping stone-slabs and filled with river-borne pebbles and brown sandy soil. An overall appearance of these stagewise filling resembles that of a blossoming flower in the section as well as on the plan. The pebble filling was carried upto the semi-dressed stone-slab circle on the northern side in a stone-slab lined 50 cm wide channel (Pl. XXV). All this filling was surrounded by multiple coursed semi-dressed stone-slab circle which, in turn, was circled by upright stone-slabs, the gap between the two being packed by pebbles.

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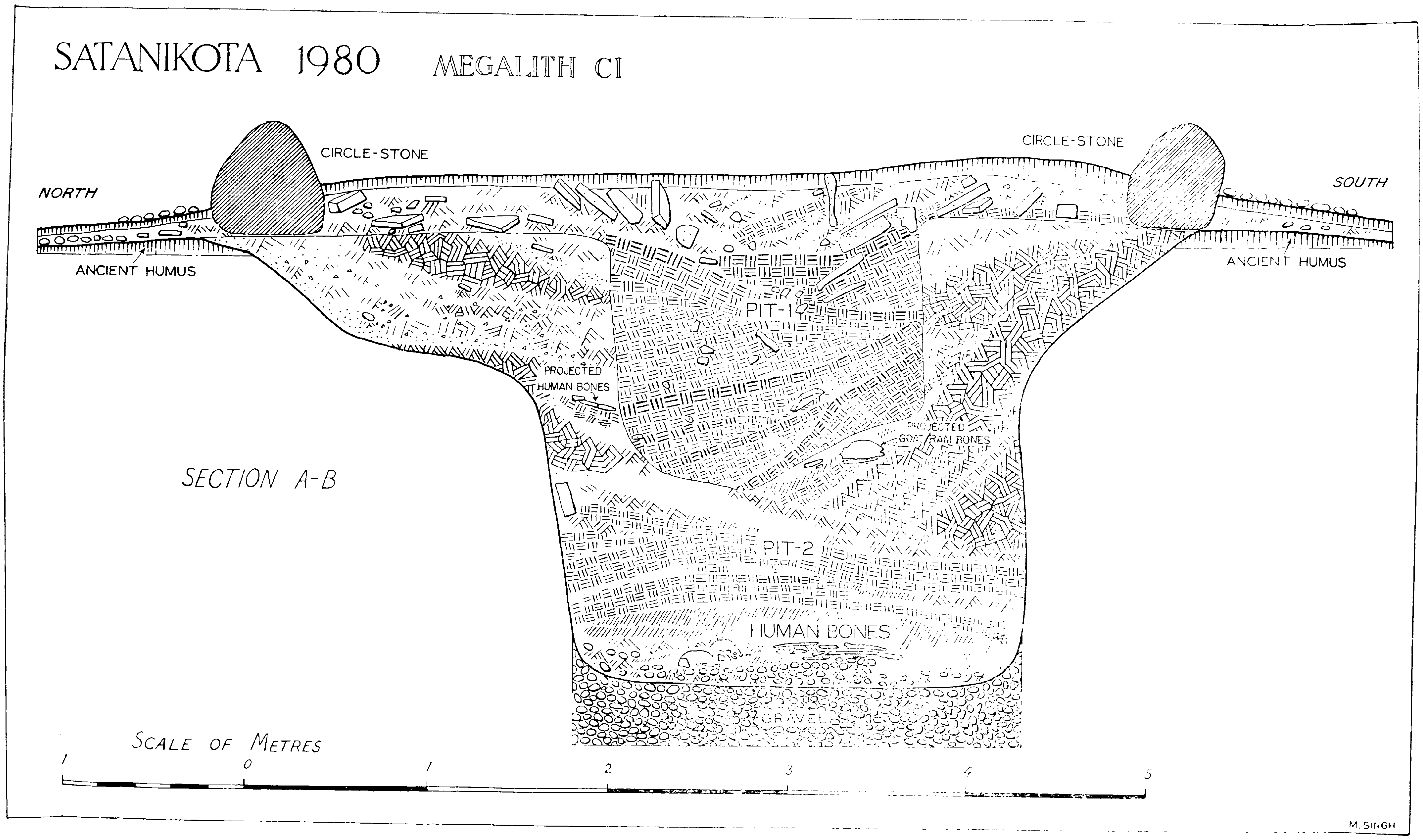
[4] *Ibid.*, Mr. M. Taylor after studying his excavated finds of Jiwarji (District Gulbarga, Karnataka), cairns from which he encountered full skeleton buried inside thought that these skeletons belonged to persons who were beheaded and buried, suggesting human sacrifice practised by megalithic folk. See for details his article, 'Description of Cairns, Cromlechs, kistvaens and other Celtic, Druidical or Scythian monuments in Dekhan' published in *Transactions of the Royal Irish Academy*, XXIV, Pt. III (1862), *Antiquities*, pp. 329-62.



SATANIKOTA 1980 MEGALITH CI
CIRCLE-STONE
CIRCLE-STONE
NORTH
SOUTH
ANCIENT HUMUS
ANCIENT HUMUS
PIT-1
PROJECTED HUMAN BONES
PROJECTED GOAT/RAM BONES
SECTION A-B
PIT-2
HUMAN BONES
GRAVEL
SCALE OF METRES
1 0 1 2 3 4 5
M. SINGH

Fig. 17

Megalith BVII (Fig. 20; Pl. XXVI):—It belonged to Type III, and situated nearly 15 m north-west of megalith BI just 10 m south of the river bank. Internally, the cist measured 1·85 m (north-south), × 0·65 m (east-west), × 25 cm (from above the top of the floor-slab). The diameter of the surrounding stone-slab circle was 4·15 m. It was disturbed and neither pottery, antiquities nor any skeletal remains were encountered in this megalith.

Megalith BVIII:—Architecturally it was just a prototype of Megalith BVII and situated very close to the latter's north. The cist of this megalith was slightly bigger than that of Megalith BVII and measuring internally 1·95 m (north-south) × 0·74 m (east-west) × 25 cm (high from the floor-slab). The stone-slab encircling it was roughly oval in shape and measuring 3·20 m on longer axis and 2·70 m on shorter axis. The diameter of the megalith including the outside stone-slab and pebble packing was 4·20 m. This megalith also yielded nothing.

D. SKELETAL REMAINS

Among the 8 excavated megaliths, only Meg. BXVII and Meg. CI yielded skeletal remains consisting long bones, ribs, skulls and phalanges, etc. In both these graves skeletal remains belonging to more than two persons were encountered. In Megalith AI only a fibula in the cist and small bone pieces in the earthern pot buried below the platform were encountered. As regards the skeletal remains found in the small pots and kept on the floor-slabs of the cist of Megalith AIII nothing positive can be said, for all the bones were crushed and found in fragmentary conditions.

All the skeletal remains encountered in the megaliths at Satanikota are of secondary nature.

The field reports submitted by Dr. Anadi Pal of Anthropological Survey of India, Calcutta, are given below: Megalith B XVII : Inside the chamber of Megalith B XVII, cranial and post-cranial bones of both human and animal remains were found lying in a peculiar manner between the depths of 68·0 cm to 85·5 cm along with some potsherds of Black-and-Red ware and red ware. The depths were measured from the highest point of the western orthostat near the south-west corner. The cranial and the post-cranial bones of human as well as of animals were fragile and badly damaged. Most of the post-cranial bones were without their extremities.

Near the eastern orthostat and at a depth of 80 cm two badly damaged long bones, probably a tibia and a femur, were found lying almost parallel to the skull A and skull B and at a distance of about 9 to 10 cm east of the aforesaid skulls respectively.

The skull A which was exposed earlier was represented by its left frontal bone along with upper orbital margin and a portion of nasal spine including two molars and a pre-molar near it. Facing towards north, the skull was found lying over some pebbles nodules at a depth of 68 cm and at a distance of 10 cm west of the wall of the eastern orthostat. Some pieces of fragmentary skull bones were also found lying in between the skull A and broken long bone.

The skull B which is bigger in size was encountered at 17 cm south of skull A. It is represented by complete occipital, broken portion particles especially and lateral sides and almost complete of the frontal bone with supra-orbital ridges in broken condition. Facing towards south, the skull was laid over some pebble nodules on its left side at a depth of 68 cm and at a distance of about 21 cm to the west of the eastern orthostat.

At a distance of about 40 cm south of skull B, some potsherds, either with rim or rimless in Black-and-red and red wares, are also found lying near the south-east.

Beneath the pebble nodules on which skull A was lying, a badly damaged humerus was found at a depth of 78·3 cm in north-west and south-east direction having its superior extremity pointed towards north-east while its inferior extremity is broken and completely missing. Just below the head of the humerus at a depth of 77·5 cm the head and neck portion of one femur was also noticed running north-east and south-west direction with its superior extremity pointing towards south-west. The junction point of these two extremities of two different long bones formed an angle of about 150°. The formation of the angle is towards skull A. On the other hand a fragmentary portion of a femur was found at a depth of 70·5 cm just over the right temporal part of skull B in north-east and south-west direction, with its head though broken and missing pointed towards north-east. Just below it at a depth of 74·4 cm the inferior extremity of one humerus was also visible which ran in north-west and south-west directions having its head pointed towards the north-west. Some isolated teeth like canine and molars were found lying below on both the sides of the humerus.

Similar to skull A, in skull B the junction point of these two opposite extremities of two different long bones also formed an angle of about 110°. In this case the formation of the angle is on the outer side of skull B.

At a depth of 81·3 cm just below skull B, a badly damaged femur without its inferior extremity was found lying in east-west direction pointing towards west. Almost parallel to it towards the south, two other long bones, one of a femur having its compressed and eroded superior extremity pointing towards east, and the other, a humerus without its superior extremity pointing towards west were found lying at a depth of 81·6 cm and 83·5 cm respectively. The shaft portion of a fibula was also found lying in a slightly inclined position over the pebble nodules at a depth of 73 cm and at a distance of 47 cm to the east of the wall of the western orthostat in north-south direction. In front of it towards east, a highly eroded talus bone was found with its calcaneum facet facing towards the north.

On the extreme south, at a depth of 70 cm near the southern orthostat, a badly damaged shaft portion probably of a tibia was also found lying over the pebble nodules. At a distance of 30 cm west of it and close to the south-west corner of the chamber, a broken mandible with its horizontal ramus having two molars of the right side was found lying at a depth of 68·5 cm over the pebble nodules. The symphysis portion along with the mental protuberance was pointed towards north. Diagonally opposite to it (i.e. on the north-east corner), a very badly damaged mandible was found over the pebble nodules and at a depth of 85·5 cm in an everted position. The mandible having its symphysis region though broken and missing was pointed towards south.

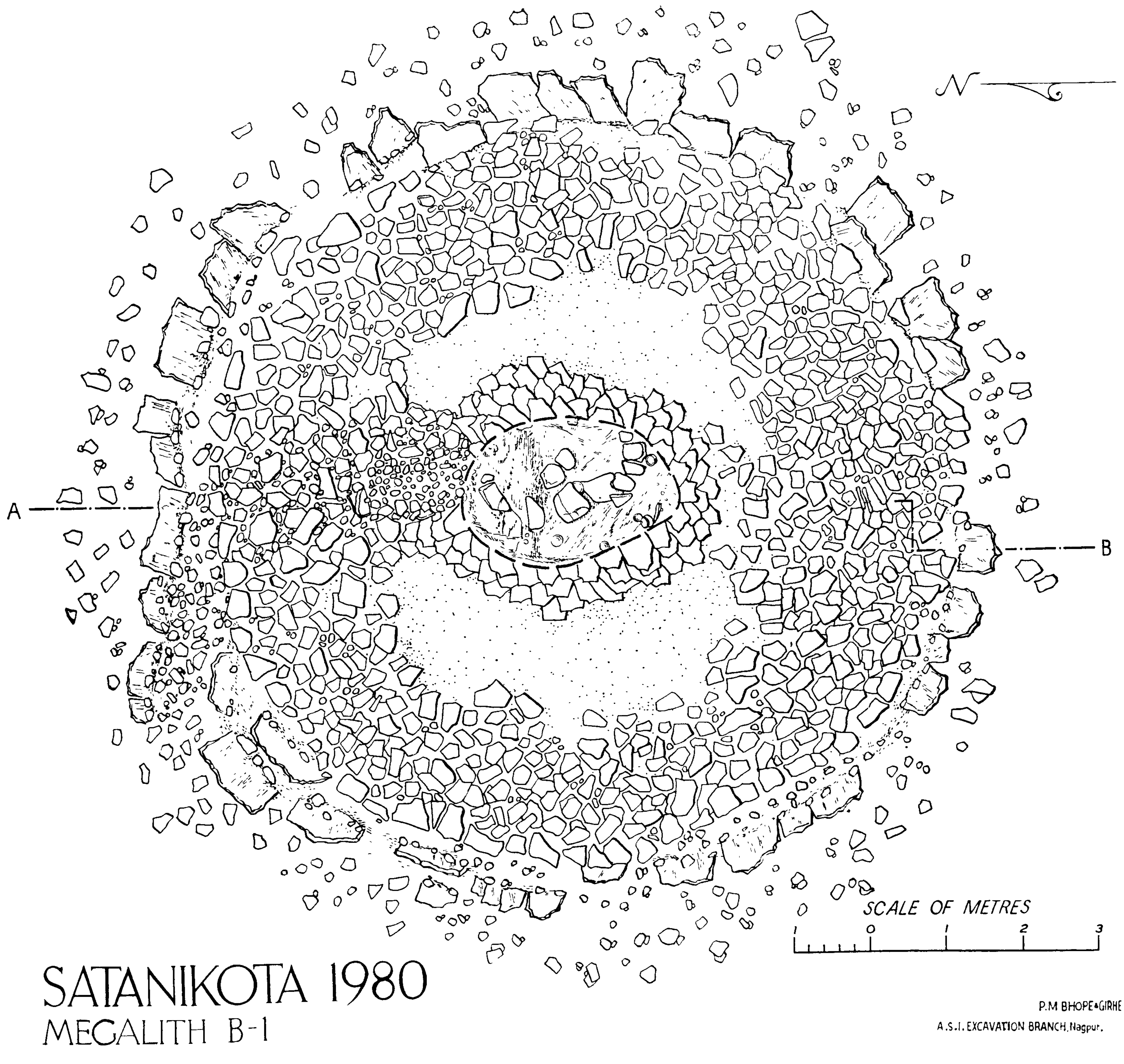

N
A
B
SCALE OF METRES
1 0 1 2 3
SATANIKOTA 1980
MEGALITH B-1
P.M BHOPE•GIRHE
A.S.I. EXCAVATION BRANCH, Nagpur.

FIG. 18

At a depth of 81·4 cm towards the north and at a distance of 26 cm north-west of skull B, there was found a very badly damaged femur in a slightly inclined position in east-west direction with its head pointed towards the east while the inferior extremity which comes very close to the head of the femur was laid just below the skull B described earlier. A fragmentary hip-bone with a portion of acetabulum cavity and a portion of ilios-ciatic notch having a wider angle was found near the middle portion of the femur. A shaft portion of the clavicle or collar-bone laid over the femur near its interior extremity, while a shaft portion of the humerus including its badly damaged lower extremity was visible just below the upper third portion of the femur at a depth of 85 cm in the north-west and south- east directions with its lower extremity pointing towards the north-west. In between the fragmentary hip-bone and the clavicle portion some broken portions of either meta-carpal or metatarsal bones were laid haphazardly.

At a depth of 73·5 cm and at a distance of 30 cm to the east of the wall of the western orthostat, a broken fibula without its extremities was found in a slightly inclined position over the pebble nodules in north-south direction which is almost parallel to the previous fibular portion. About 14 to 15 cm in its frontal east some fragmentary metatarsal bones, a portion of a rib and a skull fragment were also found lying here and there over the pebble nodules. A portion of a long bone, probably of a radius, was also found at a distance of about 10 cm north of the fragmentary skull bone. Almost at a similar depth, like the fibula towards western side near the wall of the western orthostat, the fragmentary portion of a long bone was found almost in a perpendicular position with the fibula. On the same side at a depth of 67·9 cm, a broken portion of left horizontal ramus was found in such a way that its central protuberance came upwards. Near it, the broken portion of an axillary border and the coracoid process of right scapula were noticed. At a little distance towards the south and on the same side, the broken portion of a shaft, probably of an ulna, was found lying at a depth of 79·8 cm. Towards 40 cm west of the eastern orthostat and at a depth of 80·5 cm a carnivorous animal's skeletal remains were found over some pebble nodules.

The animal skeletal remains are represented by 10 vertebrae with their transverse and spinous processes, some tiny ribs with their head, neck and articular facets, a badly damaged skull cap along with a portion of left maxilla having two teeth, and a more or less intact mandible having prominent canines and premolars. A long bone, probably a tibia, was found over the pebble nodules towards the west near the skull cap in north-south direction. Towards the east, two other long bones, probably of humerus, were also found over the pebble nodules and thus formed an angle of about 155°. In this case the formation of the angle is outside the animal skull. Close to the animal humerae were found the frag-mentary shaft portion of a radius and the portion of an animal fibula in a slightly inclined position towards the north-east direction. Some human skull fragments were also found near the animal bones towards north.

Further exposure revealed 2 skulls, a portion of right half of skull A, two femur, two tibiae and two fibulae.

On the south-east corner of the chamber, near the wall of the eastern orthostat, skull C was laid, over some pebble nodules at a depth of 76 cm in a topsyturvy condition and

was facing towards the north-east direction. The basial portion of the skull was completely crushed and depressed inwardly. The maxillary portion was completly broken and missing. The upper margin of the left orbit was slightly intact while the right one was broken and completely missing. The left mastoid process was more or less intact having highly developed mastoidal ridge while the right one was broken and compressed.

Towards 24 cm north of skull C and at a depth of 89·5 cm near the wall of the eastern orthostat, skull D, facing south-east, rested over the floor of the bottom stone-slab slanting west to east. This skull is more or less better preserved except the maxillary portion and the zygomatic processes which were broken and completely missing. Towards 20 cm west of the skull D, and at a depth of 81·5 cm, was laid the shaft portion of a fibula in north-south direction.

Just a few centimetres north of skull D, and at a depth of 84, cm, near the eastern orthostat a mandible was laid on its central protuberance with the teeth towards south. The mandible is represented by its left ascending ramus and condyloid process. The horizontal ramus is more or less intact, having altogether six teeth of which two were in broken condition. The teeth include one premolar and two molars on the right ramus and other three molars on the left ramus.

The right half portion of skull A, which was in broken condition, was found lying on the floor of the bottom stone-slab near the wall of the eastern orthostat and at about a distance of 26 cm north of skull D. Just 5 cm west of it, and at a depth of 83 cm, there has been found a broken shaft portion of fibula lying in north-east and south-west directions.

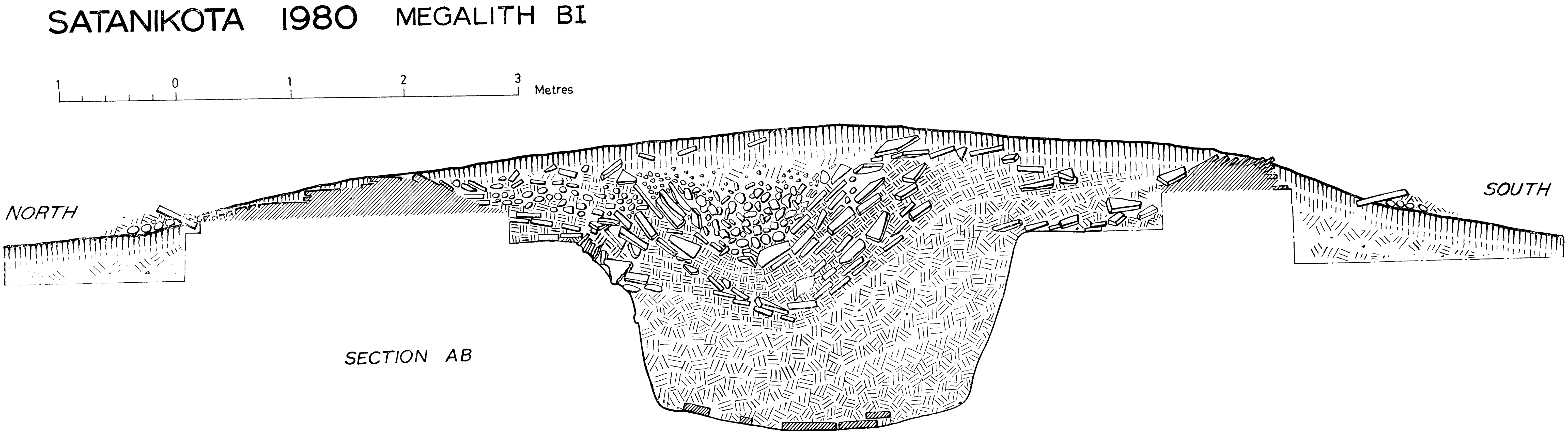
Towards the north, two broken humerae without their extremities were found at a depth of 78·5 cm and laid in such a position that they framed an angle of about 120° towards north. Near the angle one molar and a broken skull were found.

A femur, lying at a depth of 82·5 cm and at a distance of 13·5 cm west of skull C was found in a slightly inclined position with its head slightly eroded and pointing towards north-west direction while its inferior extremity was completely broken and missing.

At a distance of 20·5 cm north from the wall of the southern orthostat and at a depth of 84 cm was found the broken shaft of a tibia with its lower extremity, though broken, pointing towards the west. Close to its middle portion and at a depth of 83 cm, a hollow based pointed arrowhead, highly eroded in condition, was laid over two pebble nodules in south-east and north-west directions with the pointed end towards the south-east. The length of the arrowhead *(in situ)*, is 3·8 cm.

Apart from these, some isolated teeth like canine, incisor and molar of a non-adult individual, probably of a child, were laid here and there inside the chamber.

In the passage near the north-east corner and at a depth of 8·5 cm a right hip-bone with broken crest and pubis portion was found resting over a left clavicle and a broken rib portion in such a way that the crest portion directed towards north. The length of the hip-bone *(in situ)* is 19 cm from crest to lower most point of the ischium and the breadth measured from anterior superior spine to posterior inferior spine is 12·5 cm. The hip bone shows a larger acetabulum cavity, a prominent articular surface having a narrow and



SATANIKOTA 1980 MEGALITH BI
1
0
1
2
3
Metres
NORTH
SOUTH
SECTION AB

FIG. 19

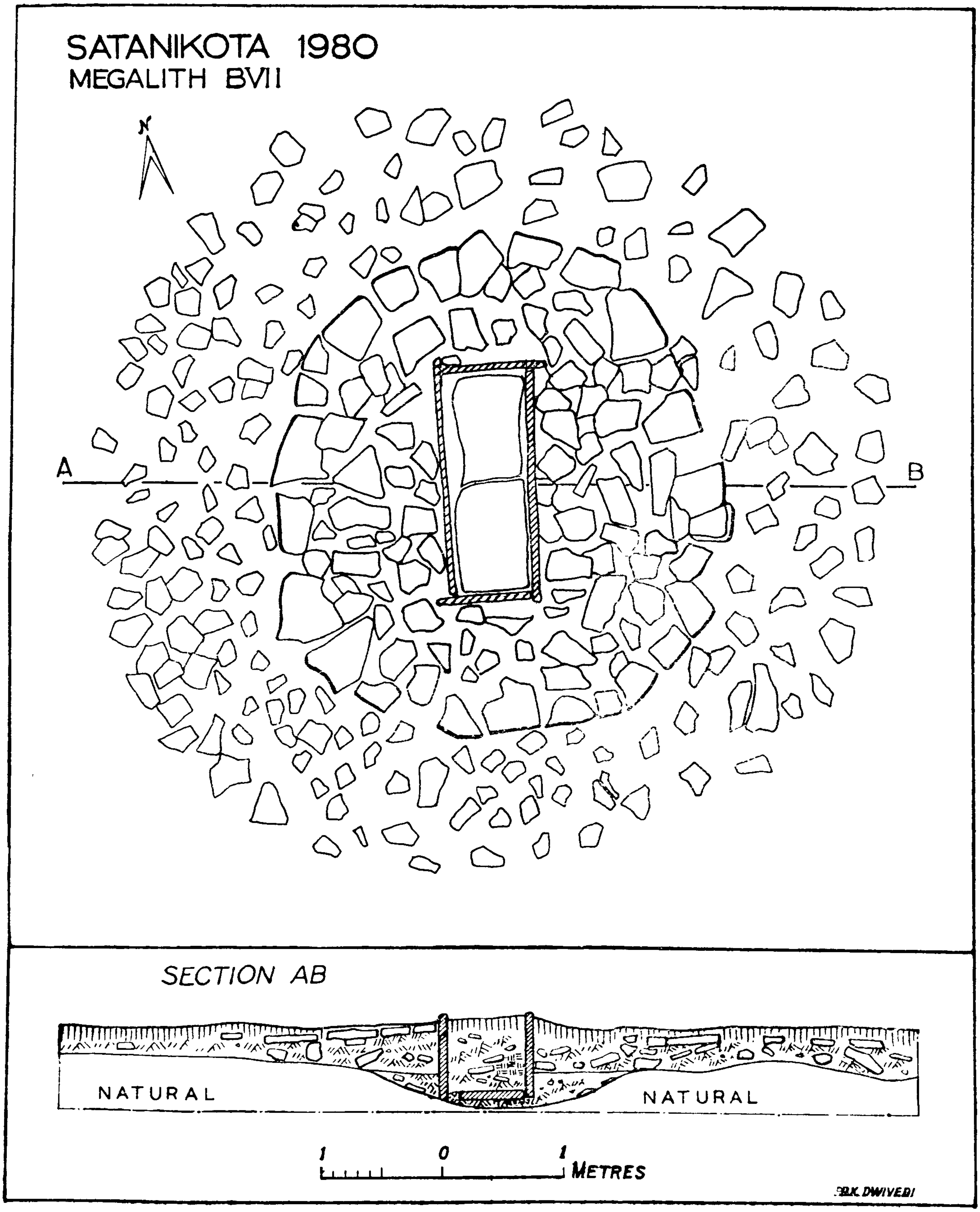

SATANIKOTA 1980
MEGALITH BVII
N
A
B
SECTION AB
NATURAL
NATURAL
1 0 1
METRES
B.K. DWIVEDI

FIG. 20

deeper iliosciatic notch. These features suggest the masculinity of the hip bone. A sherd of red ware with small rim was found below it.

On the opposite side towards the north-west corner of the passage, was found at a depth of 8·3 cm the shaft portion of two long bones without their extremities and laid in such a manner that they form a sign of '+' between themselves in east-west and north-south directions. These long bones are probably of a femur and belonging to non-adult individuals as these are slender and thin.

The skeletal remains of Megalith B XVII suggest that the burial type was secondary in nature and the entire bone remains were placed between the depths of 68—89 cm over a rectangular stone-slab which slopes gradually towards east from west. From the characteristic features of the cranial and post-cranial bones it can be said that there are probably 2 male and 2 female adult individuals along with some bone remains of a non-adult individual, probably a child.

Lastly, it can be postulated that though the burial type was secondary in nature, but the placement of some skeletal remains reveals a few interesting features which are noted below. This suggests that the bones were not thrown haphazardly but arranged deliberately in and outside the cist.

Inside the Cist:

(i) The placement of the four human skulls near the wall of the eastern orthostat.

(ii) The placement of the four human mandibles—one near the middle of the eastern orthostat and the other just opposite to it on the western wall while the remaining two are arranged diagonally on the north-east and south-west corner of the cist.

(iii) The placement of the long bones like femur and tibia just parallel to the skulls, not only in the case of human bones, but also in the case of animal bones.

(iv) The formation of an angle either inside or outside of the skulls by using two long bones, i.e. in case of both the human skulls the angle was formed by using humerus and femur while in case of animal skull the angle was formed by two humerae.

Outside the Cist :

(i) The placement of hip bone, a clavicle and a broken rib portion on a pot of red ware having a small rim in the passage does not suggest that the bones are thrown haphazardly.

(ii) Lastly, the formation of '+' sign by two long bones oriented in a perfect north-south and east-west direction are also not in favour of the haphazard throwing of the skeletal remains.

Megalith CI (a) :—The skeleton, laid supine, in the filling of a Pit of Megalith CI, is buried at a distance of 1·10 m from the eastern wall and at a depth of 1·30 m below surface in north-south direction. But an inclination of 20° from true north is noticed towards the east with the head pointed towards the north-east.

The skeleton is very fragile in condition and highly eroded, especially the vertebral column. The vertebral column is represented only by their pedicle and lamina portion.

The skeleton is represented by the following fragmentary bones :—

(i) The Humerus :—Both the right and left humerus with their upper extremities were broken and missing. The left humerus is lying almost in line with the body while the right one was slightly inclined towards the west especially on its lower extremity.

(ii) The Radius and Ulna :—Both the right and left radius and ulna are without their extremities due to non-union of their respective epiphyseal bones. The left forearm was placed in such a way that the radius comes over the ulna while on the right both of them are almost parallel and laid over the right fragmentary hip bone, forming an angle of about 120° with their respective humerus.

(iii) The Scapula and the Clavicle :—Fragmentary portion of right clavicle was found lying over the right fragmentary scapula near its supraspinous portion while the small portion of left clavicle was noticed just over the left ribs. A small fragment of spinous portion of left scapula was also visible just beneath the left humerus.

(iv) The Ribs :—Altogether 13 ribs, 6 on the right and 7 on the left, were found in broken condition. It was noticed that the margin of each rib is split into two halves, may be due to pressure of earth from the top. Apart from these, near the 10th vertebra, 2 fragmented portions of two ribs were visible one on each side. They may be the portion of false or floating ribs.

(v) The Vertebral Column :—The vertebral column is represented only by the pedicle and lamina portion of the fragmentary vertebral of 2 cervicles, i.e. 6th and 7th vertebra, 12 thoracic and 4 lumber, i.e. 1st to 4th lumber vertebral. The entire vertebral column is not at all straight but slightly curved towards the east having a maximum curvature near the 6th thoracic vertebra, may be due to unevenness of the pit surface over which the body was placed. The left ribs, though they were in proper anatomical position but laid slightly over the vertebral column.

(vi) The Hip Bones :—Fragmentary ilium portion of both the right and left hip bones were found without their crest. Over the right ilium portion the lower extremities of both radius and ulna of right hand were placed, while on the left, prominent auriculate surface with iliosciatic notch were visible. Just near to it, 4 fragmentary phalangeal portion of the right hand were also found. A portion of the left unossified acetabulum has also been found below the iliosciatic notch. On the eastern side 4 cm away from it, 4 fragmentary metacarpal with 2 phalanges of the left hand were found near the greater tracheantric point of the left femur.

(vii) The Femur :—Femur or thigh bone of both the right and left side were less damaged, but without their fully unossified extremities. The length *in situ* from head to lower border of the diaphysis is 30 cm and 29·5 cm for right and left femur respectively.

(viii) The Patella :—Both the patellas of right and left were found intact and laid just above the lower ends of both the respective thigh bones.

(ix) The Tibia and Fibula :—The unossified upper extremities of both the right and left tibia along with some portion of the shaft were found in a badly damaged condition. Fragmentary portion of the right end left fibula were also noticed in the lateral side of their respective tibia. The entire bones of both the feet are completely missing.

The skeleton as a whole suggests that the burial type is primary in nature and the body of the dead was placed on the surface which was slightly sloped towards east-west direction, as because the entire left side of the skeletal remains was slightly on the higher level than the right side.

The skeleton possesses a wider sciatic angle. So as regards sex it can be said that the skeleton belongs to a female individual.

The epiphyseal portion of all the long bones were still to be fused with their respective shaft portion. The upper extemities especially of the radius and ulna, and also at the acetabulum cavity of the hip bones, where the ilium, ischium and pubis are fused together, remained unossified. In both the cases the ossification starts at the age of 13 years. Therefore, the skeleton was of a person less than 13 years of age.

Megalith CI (b) :—At the bottom of the circular pit of Megalith CI, the human skeletal remains were found at a depth of 2·60 m from the top surface in north-south direction along with some pots of different size, shape and colour. The skeletons, though oriented in north-south directions at an inclination of 8° from true north, were noticed towards the east with the heads pointing towards north-east.

The skeletal remains were lying in such a way that they formed two separate clusters, i.e. cranial cluster and post-cranial cluster, by occupying a total area of 1·50 m in length and 0·38 m in breadth, having a gap of 0·09 m in between two clusters. The surrounding soils particularly of this area were very loose and mixed with ashes, which might have been been used for the preservation of the skeletons.

In general, the skeletal remains are highly eroded and very fragile in condition.

Cranial Cluster :—At a depth of 2·54 m from the top and at a distance of 44 cm from the northern wall of the pit, the cranial cluster comprised of 2 skulls, one lumber vertebra, one broken spinous portion of the thoracic vertebra, a broken shaft portion of a fibule and a few broken metacarpal or metatarsal bones.

Of the two skulls, skull B, facing east, was found at a depth of 2·60 m while the skull A, facing south, was found overlying by its right side at a depth of 2·54 m.

The skull A which was very badly broken is represented by its occipital, parietals and the frontal portions. Of these, the frontal part was badly crushed into pieces and the broken fragments were found in a jumbled mass in front of the skull itself. Towards the west, some broken pieces of metacarpal or metatarsal bones were lying very near to the broken parietal portion of skull A.

Near its occipital region a mandible without its condyloid and coracoid processes was found lying over the right occipital portion of skull B with its left horizontal ramus having the teeth towards north-east. The mandible was highly eroded and fragile in condition represented by its horizontal ramus with 6 permanent teeth *in situ*. The horizontal

ramae, though broken, were having two premolars and 4 molars—one premolar and 2 molars on each half.

The skull B was compressed laterally, might be due to earth pressure from the top resulting in the breakage of the skull in its mid-sagittal plane along with the entire right side into many pieces. The skull was represented by its complete occipital, parietals and frontal portions including the mandible which were laid in proper anatomical position with the skull. The frontal bone is having right upper orbital margin and a portion of *nasion*. The maxillary portion was completely disintegrated leaving a few teeth, altogether 7 in number, which were found in a dislodged position. Some of the teeth were found lying near the mandible of which the horizontal ramae are badly broken having only a few teeth *in situ*. Near it, a broken portion of right mastoid process was visible. About a distance of 3 cm east of skull B a broken lumber vertebra was found without it spinous process. The body of the vertebra was laid on the south having its transverse processes in east-west direction. Just 10 cm east of the lumber vertebra were found two sagger based bowls of Black-and-red ware. Of these, one was more or less intact and the other was heavily crushed and fragmentary in condition. Very near to them, and at a distance of 18 cm east of skull B, was found a broken big vase of red slipped ware, having a rounded rim lying on its basal portion with the opening of the mouth towards the sky.

Post-cranial Cluster :—This cluster comprised of all the long bones like humerus, femur, tibia and fibula, a broken portion of left hip-bone, some broken portion of ribs and a few metacarpal or metatarsal bones. These bones are highly eroded and very fragile in condition. Most of the long bones are without their extremities and laid in a jumbled mass between the depths of 2·55 m to 2·88 m covering a space of 94 cm in length and 38 cm in breadth.

Altogether 6 femur, 5 tibiae, 2 fibulae, 2 humerae, 3 ulna and 1 radius can be identified in this cluster. The bones like femur, tibia and fibula were oriented in north-south direction having their superior extremities towards north, but the deviation was also noticed in one humerus where its inferior extremity was pointing towards the north. Most of the bones are not in their proper anatomical position except the broken hip bone, which is having a broken portion of iliac-foosa and superior ramus of pubis and laid along with a left side femur towards its east and the bones of the right forearm and leg towards the west. The length of the right femur *in situ* is 47 cm. A sherd of black ware was found below the left hip bone. Towards the west and below the bones of the right forearm was found a right humerus with its inferior extremity pointing towards north. The total length of the humerus *in situ* is 28 cm. On the same side and at a depth of 2·88 m a shaft portion of fibula with its broken external malleolus was found in a slightly inclined position in north-east and south-west directions. Just 3 cm to the east of it, a broken portion of ulna having its broken coracoid process including the tuberosity was also noticed along with the portion of a rib. Some broken protions of ribs and a few broken metacarpal or metatarsal bones were also lying westwards near the southern wall of the pit.

Within 14 to 63 cm east of this cluster, a group of 9 pots were found lying here and there. On the opposite side and at a distance of 74 cm west of the broken fibular portion,

a pot in red slipped ware was laid on the surface of the pit with its basal portion slightly tilted and having its opening towards the west. Some potsherds of black ware having parallel lines near the rim were also found below the big vase.

A stone-slab was kept slanting in between the post-cranial cluster and the pot on the western side. A right half of an animal mandible, one incisor and two molars *in situ* have also been recorded.

After lifting the cranial cluster, the broken shaft of a femur having its distal condyles, a broken acromion and coracoid process of a scapula and some skull fragments were exposed. A group of pots in black slipped ware of which one was placed in an inverted position was encountered 5 cm to 10 cms below.

As a whole the skeletal remains reveal that except for a few most of the bones were in disarticulated and found in jumbled condition. This indicates that the burial type is secondary in nature. Some articulated bone remains like the radius and the ulna of right forearm, the femur and the tibia of right leg and a broken hip bone along with a femur of upper left leg suggest that the aforesaid body parts were not fully decomposed when they were buried. As regards the total number of individuals, variations are observed between the number of skulls in relation to the long bones. Identification of 6 femurae and 5 tibiae suggests the possibility of the burial of three individuals, though the skulls represent only two individuals.

The size of the skulls, a proper ossification of the epiphyseal position of some long bones, and the eruption of the third molars suggest that the individuals were quite adult and beyond 25 years of age.

As regards their sex, it cannot be determined with certainity from the skulls due to their badly damaged condition but, from the post-cranial bones it can be assessed that the bones belong to both male and female individuals.

E. POTTERY FROM THE BURIALS

Except Megaliths BVII and BVIII, all the excavated burials yielded pottery. Most of the pottery was exposed from Megaliths AII and AIII of Type I, Variant A and Megalith CI of Type II, Variant A. The megalithic pottery at Satanikota is significant in the sense that the red-ware and black-ware dominate Black-and-red ware and some bowls have a luted base. For example, out of 26 pots megaliths AIII has only 6 Black-and-red ware pots represented by 2 miniature vases and 2 bowls. Out of 29 pots Megalith AII has only one Black-and-red ware represented by the shoulder portion of a vase, out of 16 pots CI has 4 Black-and-red ware representing 3 bowls and 1 trough/basin. Thus, we find a nominal representation of Black-and-red ware in the burials at Satanikota. The absence of Black-and-red ware from Megaliths AI, BXVII and BI is noteworthy. In the first two burials exclusively red ware was noticed while in the third burial only one black ware was found along with 5 red ware pots. The entire pottery is plain and invariably treated with a slip either on the exterior or in the interior surface or on both sides.

However, a vase/jar in red ware, found below the stone-slab platform and attached to the outer circle of Megalith AII on the south-west side, has a herringbone pattern on the shoulder. The entire burial pottery is wheel-made.

Megalith AI (Fig. 21, 1, 2 and 3). :

Type 1. Bowl of red ware with a flattened rim top and incurved sides. The illustrated example is of medium fabric, treated with thin coating of ochreous red slip.

Type 2. Vase of red-ware with a thickened and out turned rim, oblique shoulder. The illustrated example is of medium fabric and is treated with slip both externally and internally.

Type 3. Vase of red-ware with out-turned and vertically under-cut rim and long concave neck. The illustrated example is of medium fabric, treated both externally and internally with red slip.

Megalith AII (Fig. 22, 1—16; Fig. 24, 17, 18 and 19) :

Type 1. Bowl of red ware with a featureless closing rim and rounded sides. The illustrated example is of coarse fabric containing grit and husk in the mid-section, treated with vermillion red slip.

Type 2. Bowl of red ware with a sharply incurved rim,[1] incurved sides and tapering lower portion. The illustrated example is of coarse fabric containing grit in the mid-section and treated with self slip.

Type 3. Shallow bowl of red-ware with a featureless rim and almost rounded base. The illustrated example is of coarse fabric containing grit and mica particles in mid-section, treated with self slip.

Type 4. Bowl of black-ware with a vertical sharpened rim. The illustrated example is of medium fabric, treated with a slip on both the sides. Variant 4a, of black ware differs from above in being deeper and bigger in size. It is of medium fabric and treated with slip on both the sides. Variant 4b, of red-ware differs from the main type in having internally thickened rim with convex sides. The illustrated example is of medium fabric, treated on both the sides with red slip.

Type 5. Miniature lid-cum-bowl of black-ware with a sharply incurved rim and a weakly carinated profile. The illustrated example is of medium fabric, treated with slip both externally and internally.

Type 6. Bowl of black-ware with a slightly incurved thickened rim and concave profile below the incurved sides. The illustrated example is of medium fabric, treated both externally and internally with slip.

Type 7. Lid-cum-bowl of red-ware with a slightly everted rim, carinated waist and tapering sides. The illustrated example is of medium fabric showing unoxidized smoky mid-section, treated with self slip. Variant 7a, of the same fabric and feature, differs from above in having a pronounced carinated waist. Variant 7b,

[1] *Ancient India*, No. 4, pp. 211, fig. 10, C17 (Rim portion only).

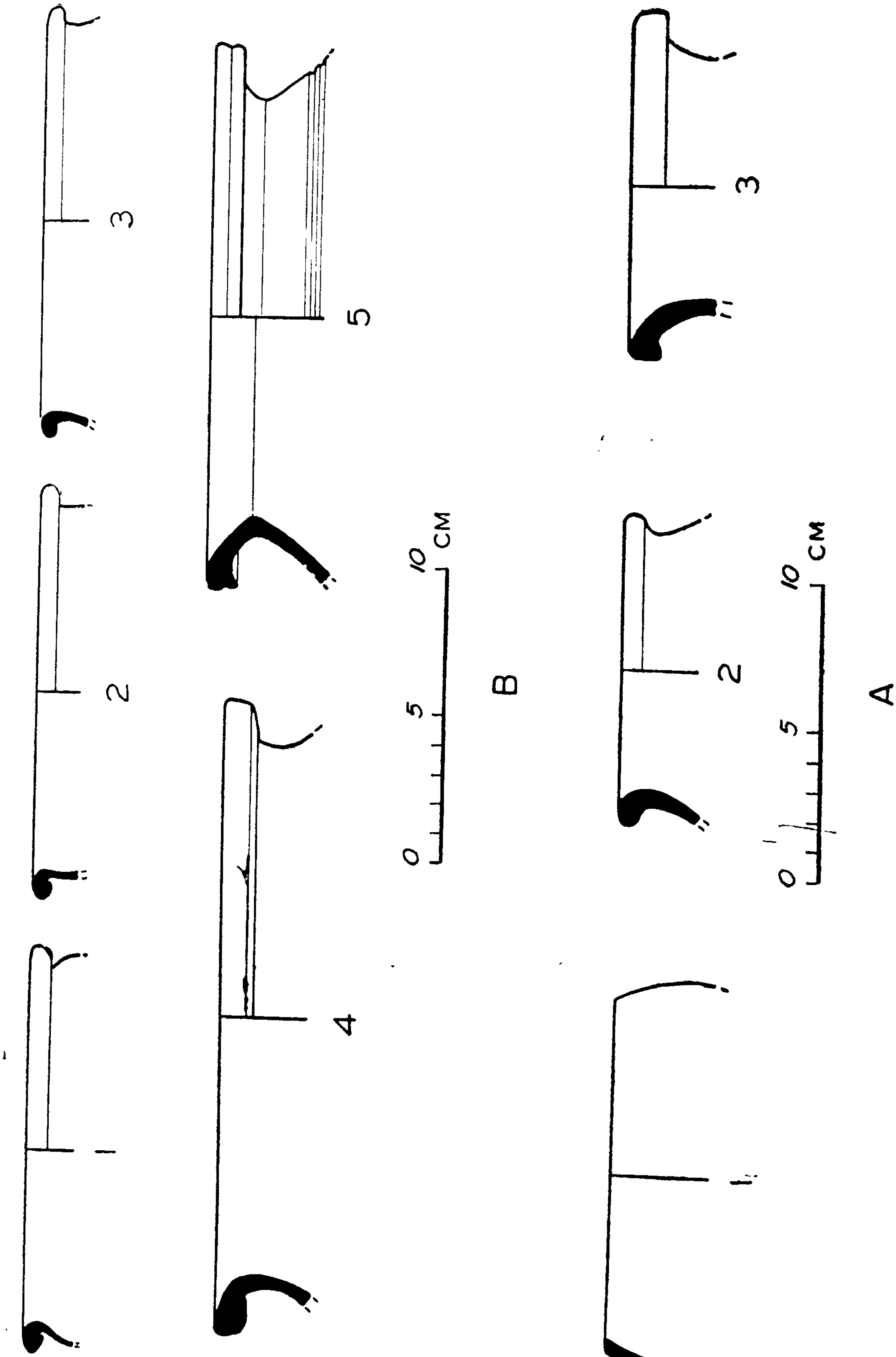


Fig. 21

of the same fabric and texture, differs from the main type in having slightly out-turned rim and corrugations above the round base.

Type 8. Bowl of red ware with internally beaded rim and tapering sides. Both the external surfaces are marked with corrugations. The illustrated example is of medium fabric, treated with slip both externally and internally.

Type 9. Bowl of black ware with a slightly incurved flattened top, externally grooved rim and almost vertical sides. The illustrated example is of coarse fabric containing grit in the mid-section, treated with a slip both externally and internally.

Type 10. Trough or basin of red ware with a splayed out thickened rim and multigrooved tapering sides. The illustrated example is of coarse fabric containing grit and husk in the mid section, and treated both externally and internally with a slip. Variant 10-a, of black ware, differs from the above in having a grooved shoulder with pronounced inner projection. The illustrated example is of medium fabric, treated with a slip on both the sides.

Type 11. Miniature trough or basin of black ware with an out-turned featureless thickened rim and vertical sides. The illustrated example is of medium fabric, treated with a slip both externally and internally.

Type 12. Vase of red ware with a splayed rim which is further marked with a groove on the top, short concave neck and convex multi-grooved shoulder. The illustrated example is of medium fabric, treated with ochreous red slip externally, Variant 12a, of red ware, differs from above in having internally beaked rim. It is of coarse fabric showing unoxidized smoky section and is treated with ochreous red slip. Variant 12b, of red ware, differs from the main type in having sharpened rim and oblique shoulder. It is of coarse gritty fabric, treated with vermillion red slip.

Type 13. Vase of black ware with an out-turned rim, which is further distinguished by internal groove, short concave neck and oblique expanded shoulder. The illustrated example is of medium fabric, treated with a slip both externally and internally and restricted to the rim. Variant 13a, of the same fabric and texture, differs from above in having a multi-grooved neck and parforated shoulder. Variant 13b, of the same fabric, and texture, differs from the main type as being smaller in size.

Type 14. Miniature vase of red ware with an outturned and internally obliquely cut rim and oblique shoulder. The illustrated example is of coarse fabric, treated with a slip both externally and internally.

Type 15. Vase of red ware with flaring externally thickened rim[1] and long concave neck. The illustrated example is of coarse fabric, treated with a slip both externally and internally.

Type 16. Vase of red ware with an internally projected rim, which is further marked with a groove on the top and externally decorated with incised rope pattern, short

[1] *Ancient India*, No. 20 & 21, pp. 82, Fig. 25, 31 (rim only).

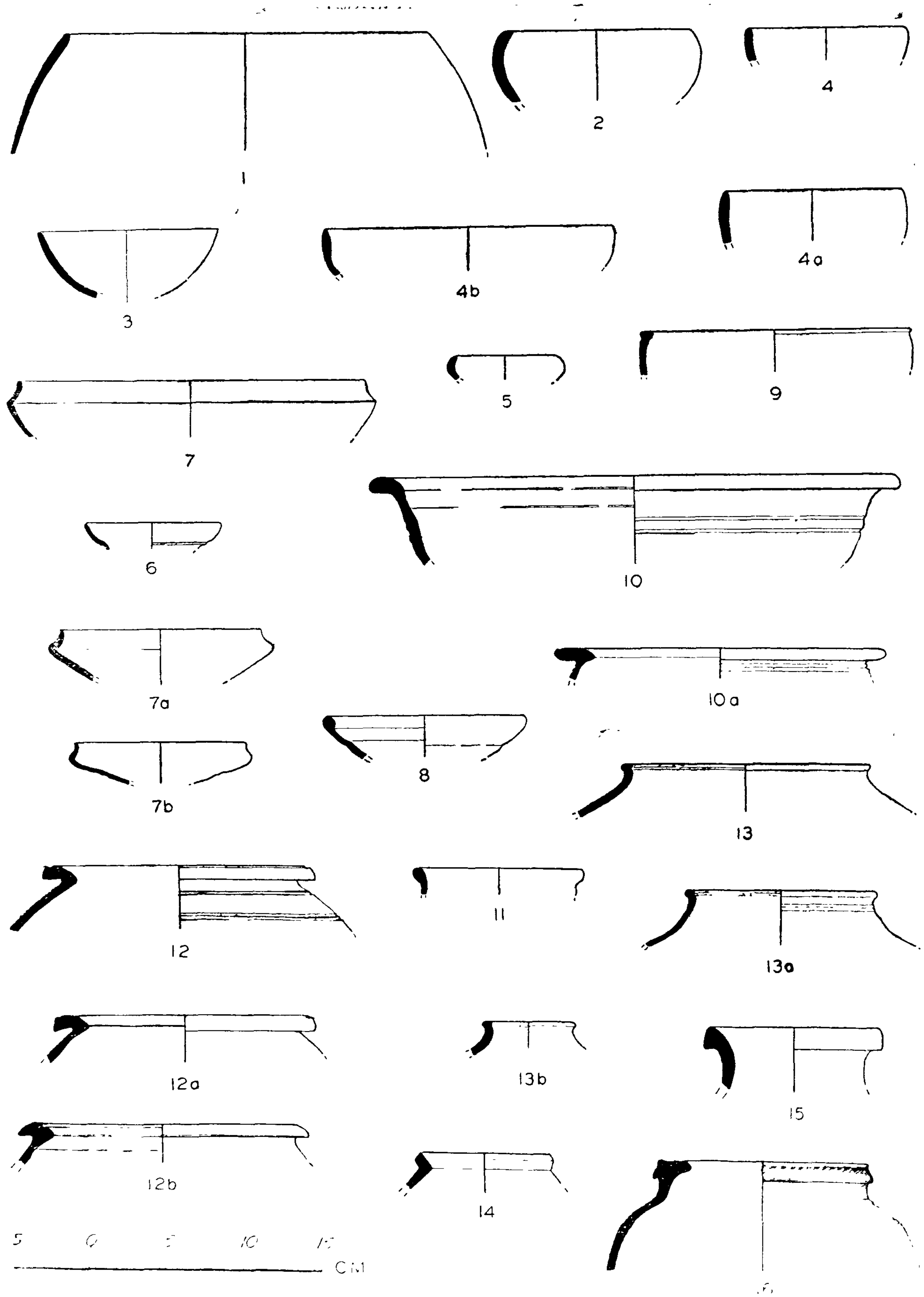


FIG. 22

concave neck, convex multi-grooved shoulder and globular profile. The illustrated example is of coarse fabric containing grit in the mid-section, treated with a slip externally.

Type 17. Basin (used as lid) of red ware and with a slightly incurved thickened rim which is further distinguished by a groove internally, double grooves on shoulder, rounded profile and almost a rounded base. The illustrated example is of coarse fabric showing unoxidized smoky mid-section, treated with a slip both externally and internally.

(This lid was found kept inverted on the vase, Type 18, described below. The vase with lid was found below the stone-slab platform attached to outer circle of Megalith AII on the south-wast side).

Type 18. Vase or jar of a red ware with a slightly incurved externally almost vertical thickened rim resulting in a curvature, short concave grooved neck, convex shoulder and a bulging profile. Body is decorated with incised herring bone pattern. The illustrated example is of coarse fabric showing unoxidized smoky mid-section, treated with self slip.

Type 19. Vase of jar of red ware with an incurved thickened rim which is distinguished by a dropping rounded feature on the external side, and a long concave neck. The illustrated example is of coarse fabric containing grit, coated with thick slip both externally and internally.

Megalith AIII : (Fig. 23, 1—18; Fig. 24, 20) :

Type 1. Bowl of Black-and-red ware with a vertical sharpened rim, straight sides, weakly bulging waist and round base. The illustrated example is of coarse fabric showing husk and grit in the mid-section, treated with black slip both internally and externally and restricted to the waist.[1] Variant 1a, similar in fabric and differs from above in size and texture, is having slightly incurved rim.

Type 2. Shallow bowl of red ware with a featureless thickened rim and round base. The illustrated example is of coarse fabric showing grit and husk in the mid-section, treated with dull red slip. Variant 2a, differs in having a obliquely cut rim with ridge below the waist though similar in fabric and texture as above.

Type 3. Lid-cum-bowl of red ware with an undercut flat topped rim and convex base, it is of medium fabric showing mica particles and grit in the surface, treated with red slip both externally and internally.

Type 4. Lid of red ware with a flattened top internally undercut rim, tapering sides and convex base.[2] The illustrated example is of coarse fabric showing mica and grit particles on surface, treated externally and internally with a slip.

Type 5. Tulip-shaped lid of red ware with a flattened and internally vertical-cut rim, and rounded body which is further marked with an internal ridge, and flattened

[1] *Ancient India,* No. 15, p. 25, fig. 4, 38.

[2] *Ancient India,* No. 13, p. 67, fig. 22, 13.

convex base. The illustrated example is of medium fabric, treated with red slip both externally and internally.[1]

Type 6. A shallow bowl of red ware with incurved sharpened rim, tapering sides with a round bottom.

Type 7. Shallow bowl of red ware with an internally collared rim, both external and internal sides are marked with corrugation and convex base. The illustrated example is of medium fabric, treated both externally and internally with red slip. Variant 7a, differs from above in having a vertical internally thickened rim. The illustrated example is of coarse fabric showing husk and grit in mid-section, treated with lustrous red slip. Variant 7b, differs from the main type in having internally round collared rim and flat base. The illustrated example is of coarse fabric showing husk and grit in the mid-section, treated both externally and internally with red slip.

Type 8. Lid-cum-bowl of red ware with a sharpened externally obliquely cut rim, short flanged waist, slightly depressed profile above the round base. The illustrated example is of coarse fabric showing grit and husk in mid-section, treated with red slip both externally and internally. Variant 8a, similar in fabric and texture differs from above in having thickened rim. Variant 8b, differs from the main type in size and having internally cut rim. It is of coarse fabric showing grit and husk, treated with red slip both externally and internally.

Type 9. Bowl of red ware with a vertical thickened rim, a little depressed shoulder, bulging waist and concave profile above the round base. The illustrated example is of coarse fabric, treated both externally and internally with red slip.

Type 10. Lid-cum-bowl of red ware with a slightly everted rim, flanged waist, concave profile above the round base. The illustrated example is of medium fabric showing unoxidized smoky mid-section and is treated with red slip. Variant 10a, differs from above in having an internally obliquely cut rim, weakly flanged waist and a disc base which is internally marked with a ridge. The illustrated example is of medium fabric, treated externally and internally with red slip.

Type 11. Lid-cum-bowl of red ware with a slightly everted rim, short flanged waist and convex base. The illustrated example is of coarse fabric showing husk and grit in the mid section, treated with red slip both externally and internally.

Eype 12. Lid-cum-bowl of red ware with out-turned thickened rim, short oblique shoulder, carinated waist and tapering sides marked with a groove. The illustrated example is of medium fabric, treated with red slip both externally and internally.[2]

Type 13. Tulip-shaped lid-cum-bowl of red ware with a slightly everted rim, carinated waist, concave profile above the rounded base. The illustrated example is of coarse fabric showing grit in mid-section, treated with a slip both externally and internally.

[1] *Ancient India*, No. 13, p. 66, fig. 22, 13.
[2] *Ibid.*, p. 66, fig. 22, 14.

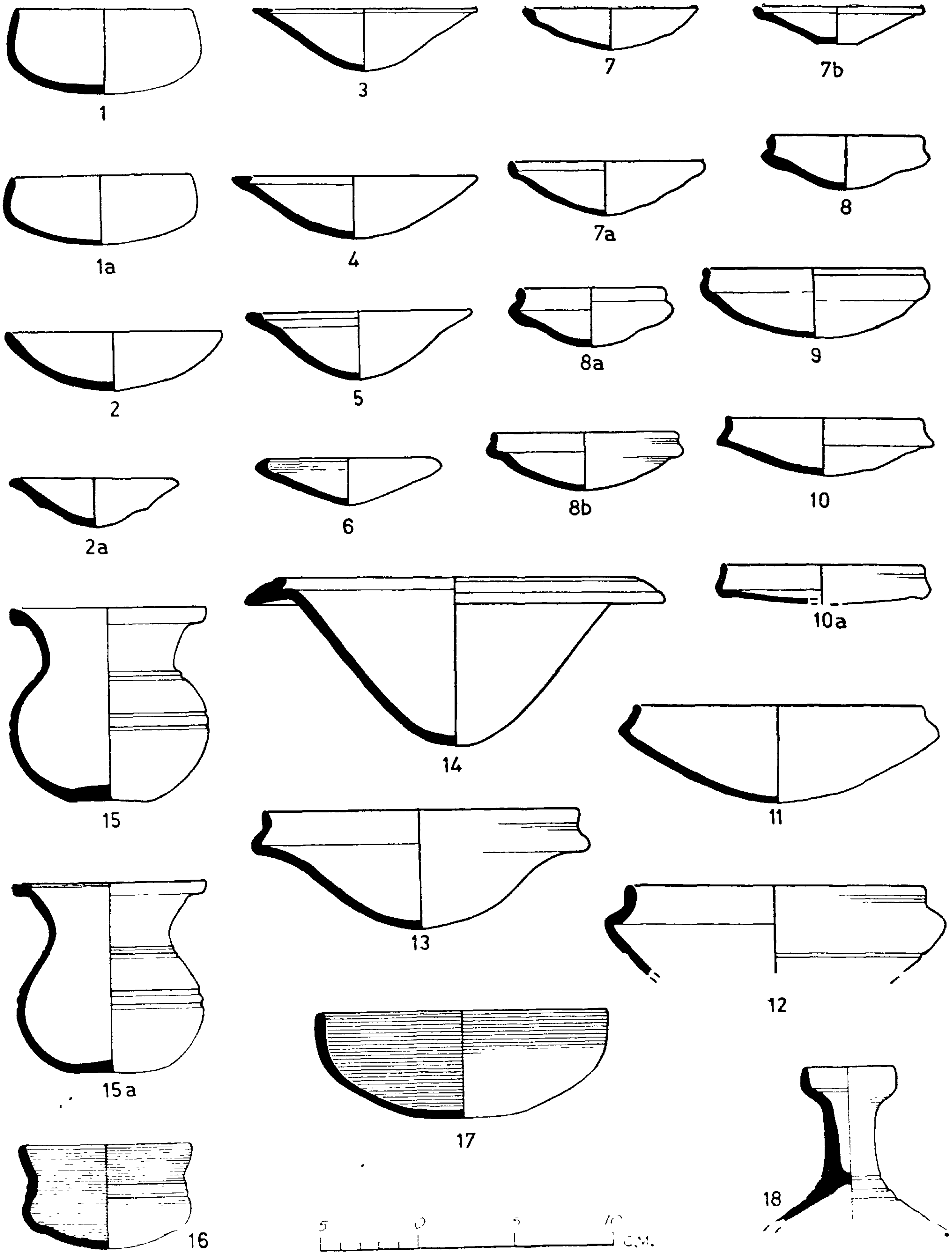

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FIG. 23

Type 14. Tulip-shaped lid-cum-bowl of red ware with a flared rim which is further distinguished by two grooves at the top and internally under out, tapering sides and flattened convex base. The illustrated example is of medium fabric, treated with red slip both externally and internally.

Type 15. Lota *(chembu)* of Black-and-red ware with an out-turned rim, elongated concave neck, convex grooved shoulder and a globular body. The profile is further distinguished by two grooves and a flat base. The illustrated example is of medium fabric, treated both externally and internally with black slip upto shoulder, rest of the external portion is treated with red slip and the internal portion is devoid of any wash or slip. Variant 15a, of the same fabric and texture, differs from above in having two grooves at the top of the rim and an oblique shoulder.

Type 16. Bowl of Black-and-red ware with an everted featureless thickened rim, multi grooved concave shoulder, weakly carinated waist and rounded base. The illustrated example is of medium fabric showing an unoxidized smoky section, treated with black slip both internally and externally and restricted to the rim.

Type 17. Bowl of Black-and-red ware with a featureless rim, weakly carinated profile and almost flat luted base. The illustrated example is of medium fabric, treated with a slip. It is of medium fabric.

Type 18. Lid topped with handle in black ware and treated with a slip. The illustrated example is of medium fabric showing unoxidized smoky section.

Type 19. Shoulder portion of a vase of Black-and-red ware. It is decorated with three horizontal rows of incised patterns interspersed by horizontal grooves. It is of medium fabric (Fig. 24, 20).

Megalith BXVII (Fig. 21, 1-5) :—

Type 1. Small sized vase of red ware with a clubbed rim and incurved sides. The illustrated example is of medium fabric showing unoxidized smoky mid-section, treated with red slip.

Type 2. Medimum sized vase or basin of red ware with an out-turned externally folded rim and incurved side. The illustrated example is of medium fabric, treated both externally and internally with lustrous red slip which has almost worn out.

Type 3. Vase of red ware with a clubbed rim and an almost long concave neck. The illustrated example is of medium fabric, treated with red slip which has almost worn out.

Type 4. Vase of red ware with an out-turned externally thickened rim, short concave neck and oblique shoulder. The illustrated example is of coarse fabric showing unoxidized smoky mid-section, treated with ochreous red slip.

Type 5. Vase of red ware with an out-turned externally grooved rim which is further distinguished by its drooping tendency and multi-grooved oblique shoulder. The illustrated example is of coarse-gritty fabric showing unoxidized smoky mid-section, treated with red slip on the exterior surface.

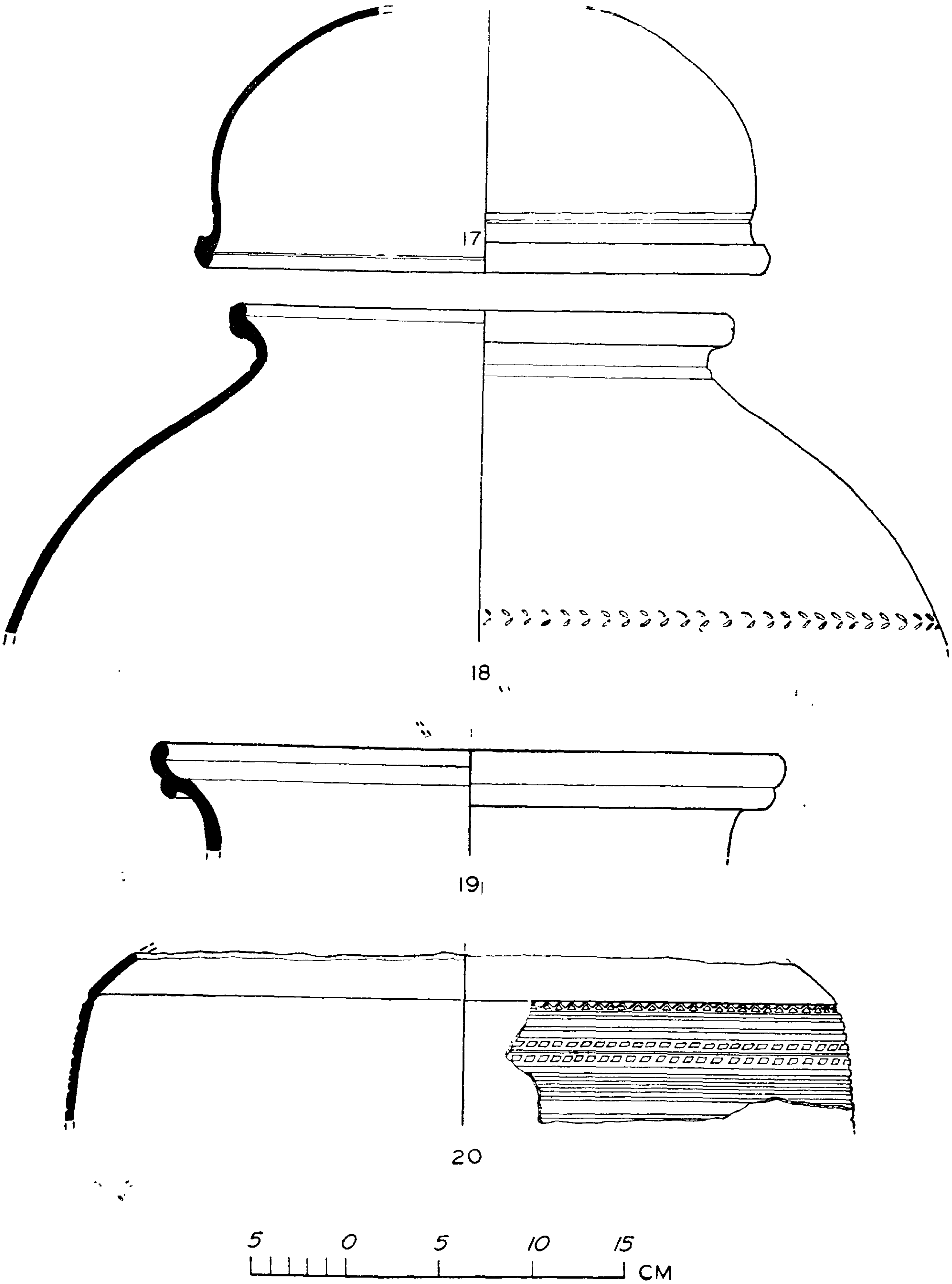

FIG. 24

Megalith CI (Fig. 25, 1-11) :—

Type 1. Bowl of Black-and-red ware with an incurved and internally obliquely cut rim and convex sides which are further marked by a groove on the shoulder externally. The base is luted to the body. A mid-rib is formed just at the junction of the two portions. The illustrated example is of medium fabric, treated with black slip and burnished internally and externally upto the waist. Variant 1a, bowl of black ware and differs from above in having a thickened rim. The illustrated example is of medium fabric and is treated with black slip and then burnished both externally and internally.

Type 2. Bowl of Black-and-red ware with a slightly incurved sharpened rim, partly vertical sides, round profile and round base. The illustrated example is of fine fabric, treated with black slip and then burnished internally and externally upto the waist. Variant 2a, is of the same fabric and texture, differs from above in having incurved sides, the round base is luted to the body leaving a depression on the outside at the unction.

Type 3. Bowl of black ware with a slightly incurved thickened rim and incurved sides. The base is luted to the body. It is distinct with a mid-rib at the inner and depressed slightly on the same junction exterior. Internal base is further distinguished by two prominent circular ribs. The illustrated example is of medium fabric showing unoxidized mid-section, treated with a slip and burnished. Variant 3a, similar in fabric and texture as above and differs in having its shallowness.

Type 4. Deep bowl of black ware with an incurved thickened rim, incurved sides and round base. The base is luted to the body which is apparent from the outside. The illustrated example is of fine fabric, treated with black slip and burnished.[1] Variant 4a, differs from above in having straight sided vertical sharpened rim and in fabric and feature, it is as above.[2]

Type 5. Lid-cum-bowl of red ware with an inturned thickened rim, weakly carinated waist, slightly concave profile above the round base. The illustrated example is of medium fabirc, devoid of any wash or slip.

Type 6. Domical lid of black ware with a vertical lip and a conical knob luted at the top. The illustrated example is of medium fabric, treated with black slip and polished externally.

Type 7. Trough or basin of Black-and-red ware with an externally oval collared rim, grooved shoulder and round base. The illustrated example is of medium fabric showing unoxidized mid-section, treated with black slip both externally and internally and restricted upto the waist.

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[1] *Ancieng India,* No. 4, p. 210, fig. 9, Clb.

[2] *Ancient India,* No. 15, p. 25, fig. 4, 41.

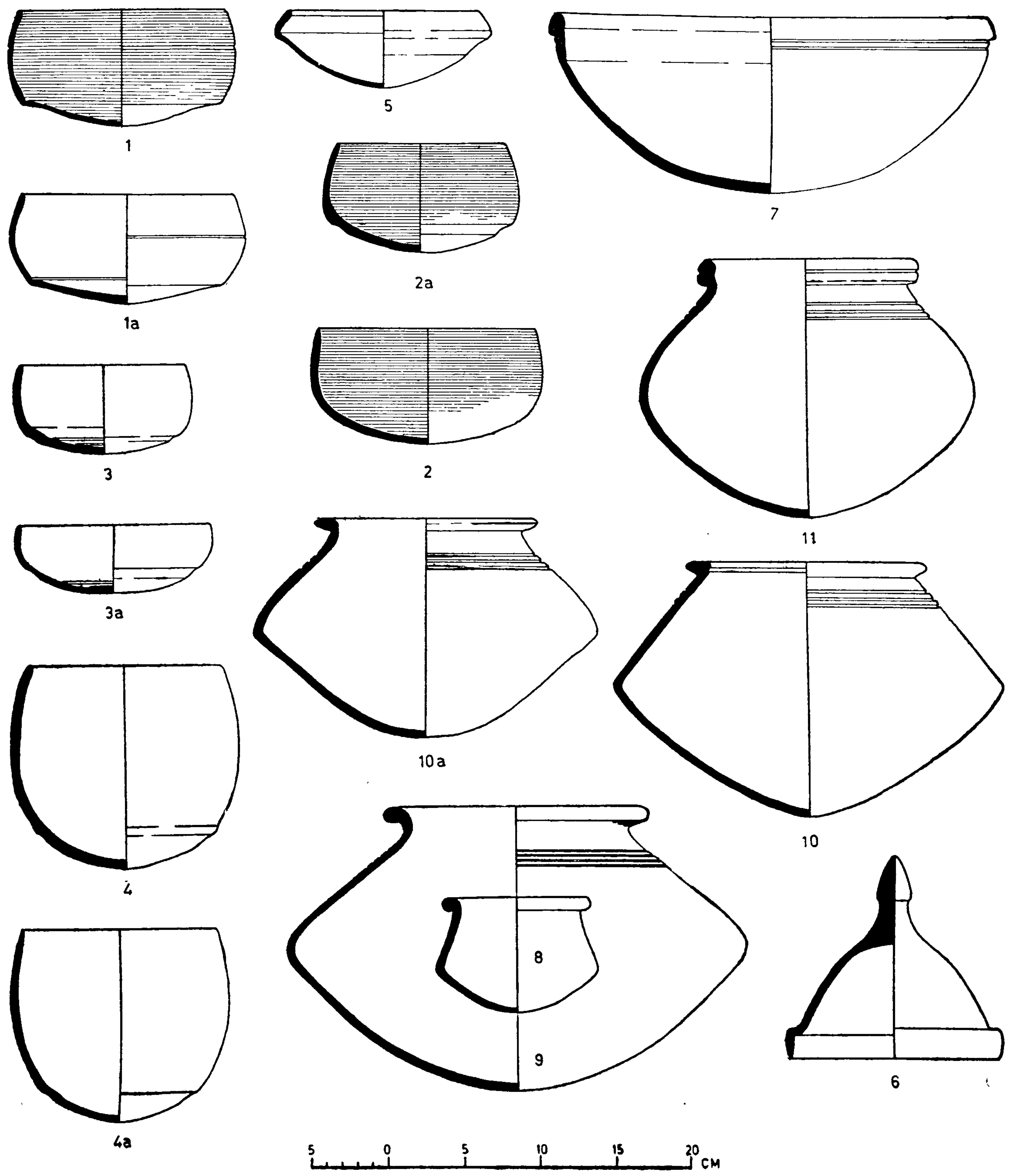

FIG. 25

Type 8. Small vase of black ware with externally beaded rim, oblique shoulder, carinated waist and round base. The illustrated example is of medium fabric, treated externally with black slip and burnished.

Type 9. Vase of red ware with an out-turned externally thickened rim, multi-grooved oblique shoulder, weakly carinated profile and round base. The illustrated example is of medium fabric, treated externally with red slip and internally restricted to rim.[1]

Type 10. Vase of red ware with an out-turned flattened top and internally grooved rim, grooved oblique shoulder, prominently carinated profile and sagger base. The illustrated example is of medium fabric showing unnoxidized mid-section, treated with bright red slip. Variant 10a, though similar in fabric and texture as above, differs from above in size, and concave profile above the convex base.

Type 11. Vase of red ware with an almost vertical thickened rim which is further distinguished by a groove externally and a depression internally, multi-grooved oblique shoulder, bulging body and round base. The illustrated example is of medium fabric showing unoxidized smoky mid-section, treated with bright red slip.

Megalith BI (Fig. 26, 1-5a) :—

Type 1. Lid-cum-bowl of red ware with a slightly incurved rim, a little depression above the carinated waist and round base. The illustrated example is of medium fabric showing unoxidized smoky mid-section, treated with red slip on both the sides.

Type 2. Lid-cum-bowl of red ware a closing rim, with slight depression above the waist rounded profile and round base. The illustrated example is of medium fabric, treated with red slip both externally and internally.

Type 3. Tulip-shaped lid-cum-bowl of red ware with an externally thickened and drooping rim, round corrugated sides and round base. The illustrated example is of medium fabric, treated both externally and internally with red slip.[2] Variant 3a, is of the same fabric and texture differs from above in having tapering sides and flat base.

Type 4. Miniature bowl or dish of a black ware with a slightly incurved rim, incurved sides, weakly carinated waist and a flat base. The illustrated example is medium fabric, treated with black slip and burnished.

Type 5. Vase of red ware with an out-turned sharpened rim, which is further distinguished by a flattened top and internally grooved, short-concave neck, oblique shoulder, weakly carinated profile and a round base. The illustrated example is of medium fabric showing unoxidized smoky mid-section, treated with a slip both externally and internally but internally it is restricted to rim. Variant 5-a, differs from above in having internally oval collared rim,

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1 Subrahmanyam R; *Nagarjunakonda, op. cit.*, (1975), fig. 91, 12.

2 *Ibid.*, fig. 90, p. 198, 9.

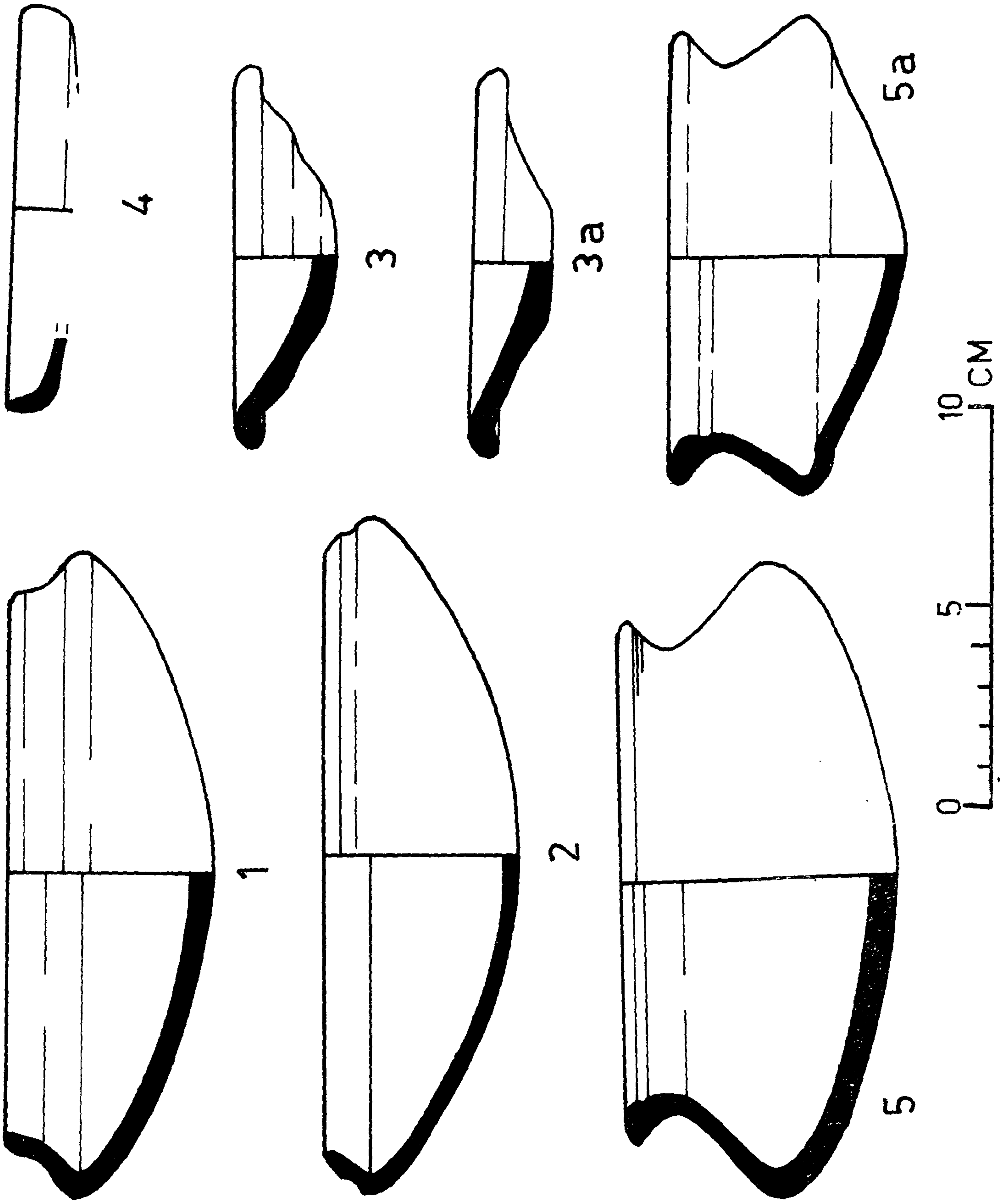

FIG. 26

prominently carinated waist, concave profile above the sagger base. Fabric and feature as above.

F. OTHER FINDS

Generally, when one thinks of any megalithic excavation it will immediately occur to one's mind the inevitability of metal objects, mostly iron, Black-and-red ware pottery, beads and skeletal remains in the graves.

But unlike other megaliths in the South and in the Deccan, the burials at Satanikota yielded very few antiquities. Whatever may be the available antiquities they were from the re-opened and damaged Cist-with-Passage type of megaliths (AI, AII and BXVII) alone. Perfectly intact Pit-Circle type burials (CI and BI) did not yield a single antiquity except a small pottery disc found in the filling of CI, though the former yielded four skeletal remains and 18 pots, and the latter yielded 7 pots. However, the third type, i.e. Cist-Circle type, BVII and BVIII did not yielded either pottery or antiquities or any skeletal remains.

Despite their damaged conditions the excavated tombs of Type I yielded a small iron arrow head, fragments of iron nail, shell and bichrome glass bangles, a bronze rattle and a squarish copper object.

i) Metal Objects

The metal objects are represented by iron and examples, one of copper and one of bronze, are described below :

(a) Iron Objects

1. A broken nail having rectangular section with one end tapering. From the Cist of Megalith AI [STK (Meg.), 034] (Fig. 27, 6; Pl. XXVII, 6).
2. A hollow conical object-appers to be an arrow-head. From the cist of Megalith BXVII [STK (Meg.), 050] (Fig. 27, 7; Pl. XXVII, 7).

(b) Copper and Bronze Objects

3. A squarish copper object with both sides plain. From the Chamber C of the cist of Megalith AII [STK (Meg.), 013] (Fig. 27, 8; Pl. XXVII, 8).
4. A bronze rattle having the decoration of a grotesque human face carved in low relief on one side with the other side broken. From the eastern side of the passage of Megalith AII [STK (Meg.), 012] (Fig. 27, 9; Pl. XXVII, 9).
   A somewhat similar rattle was reported from a late stratum of the Andhra Culture at Brahmagiri.[1]

(ii) Bangles

Five fragments of bangles were recovered from the cists of Type I only.

1. Fragment of a shell bangle, plano-convex in section. From the cist of Megalith AI [STK (Meg.), 035] (Fig. 27, 1; Pl. XXVII, 1).

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[1] *Ancient India*, No. 4, p. 269, fig. 41, 9.

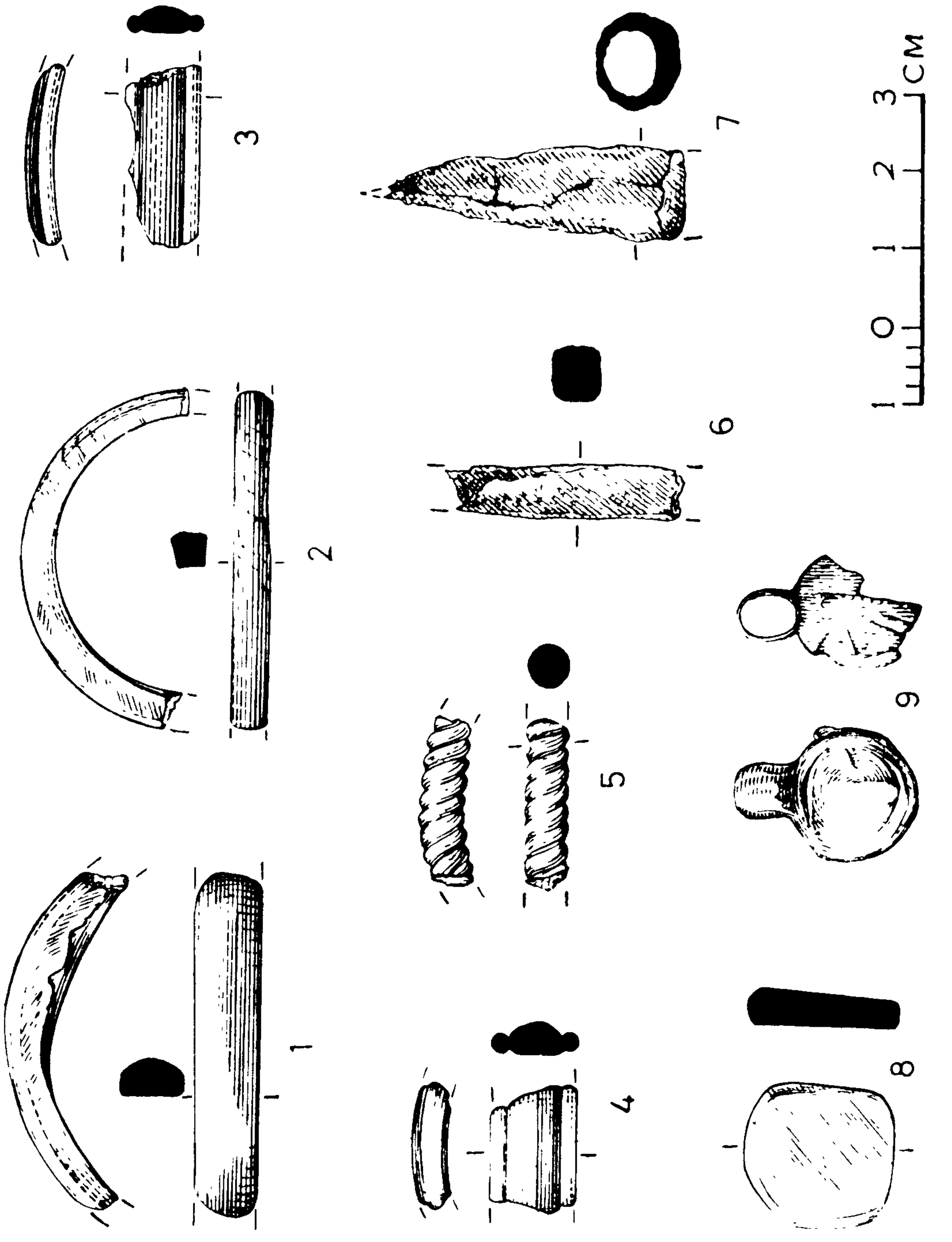

FIG. 27

2. A broken shell bangle piece, rectangular in section and slanting cut marks on the edge. From the cist of Megalith AII [STK (Meg.), 015] (Fig. 27, 2; Pl. XXVII, 2).
3. Fragment of a green glass bangle, circular in section with spiral design in low relief all round. From Chamber B of the cist of Megalith AII [STK (Meg.), 016] (Fig. 27, 5; Pl. XXVII, 5).
4. Fragment of a bichrome glass bangle, plano-convex in section. From chamber B of the cist of Megalith AII [STK (Meg.), 017] (Fig. 27, 3; Pl. XXVII, 3).
5. Fragment of a bichrome glass bangle, plano-convex in section. From chamber B of the cist of Megalith AII [STK (Meg.), 018] (Fig. 27 4; Pl. XXVII, 4).

(iii) Miscellaneous Objects *(not illustrated)*

1. A circular disc like limestone object 5·5 cm diameter and 1·5 cm thick. From the cist of Megalith AI [STK (Meg.), 033].
2. A pottery disc made out of a Black-and-red ware, diameter 3 cm. From the earth filling of the Stone-Circle Megalith CI [STK (Meg.), 036].

G. CHRONOLOGY

It is nearly four decades since Wheeler had scientifically excavated a few megaliths at Brahmagiri and dated them in a conventional sequence with the help of comparative stratigraphy of the habitational site and the graves to around 200 B.C.—A.D. 50. Since then thousands of megaliths have been excavated revealing among other things, identical iron objects and Black-and-red ware pointing out to a particular conservative culture maintaining its own identity throughout the centuries wherever they had gone. But all this material evidence could not help in fixing any date to the megalithic culture acceptable to all the scholars. There is as wide a gap in the dates as 1200 (Konnur, North Karnataka) B.C.[1] to A.D. 400 (Nilgiris).[2] Some scholars have put forth their arguments in support of this variance stating that the megalithic people were nomadic and went form one place to another. And construction of their burial monuments had been influenced by geographical conditions of the new places they reached and new group of people they came into contact. Thus we find architectural variations in the megaliths. Therefore, the three types with nearly five variations in the structural features of the megaliths at Satanikota was a result of more than one group inhabiting the near by area either simultaneously or at different times. As regards the date of these tombs in the absence of any datable evidence, it is very difficult to say anything.

However, taking into consideration the architectural features and the pottery types found in the burials approximate dates can be assigned. For example, the excavated tombs

[1] Sundara A; *op. cit,* (1975), pp. 198-216.

[2] Hough J; *Letters on the climate etc. of the Neilgherries* (London, 1879, 8-84, as quoted by K. S. Ramachandran in *Puratattva,* Varanasi, 1969-70, No. 3, p. 107.

of Type I revealed almost similar architectural features comparable to those of Brahmagiri in Karnataka with a few exceptions. The Satanikota megaliths appear more advanced having perfect outer circles built of well dressed Cuddapah stone slabs, and transepted cists and passages. Can these additional features suggest a later date to the Type I megaliths of Satanikota ? If the revised date of the Brahmagiri is from 800 B.C. to 100 B.C.[1] the Satanikota Megaliths can be dated around 4th-3rd century B.C. The later date, i.e. 3rd century B.C. is further supported by the bronze rattle with one side carved in low relief of a grotesque human face found in the passage of Megalith AII. A similar bronze rattle was recovered from the habitational site at Brahmagiri in the late Andhra levels earlier dated by Wheeler to 1st century A.D. to 3rd century A.D. but pushed back by Sundara from 3rd century B.C. to 1st century A.D. The presence of more than one platform like stone-slab structure attached to the edge of the outer slab-circle of the tombs also suggests a later date for these megaliths. For, this feature is completely new and is not found in any excavated tombs in India.

Of Type II (Pit-Circle) monuments, Granite boulder Circle (Meg. CI), which is the only one of its kind at Satanikota, seems to be the earliest monument, here. In Vidarbha region such stone-circles are dated from 8th century to 4th century B. C.[2] At Nagarjunakonda in Andhra Pradesh, the megaliths including the Stone-Circles are dated to around 650 B.C.[3] Therefore, the Pit-Circle type megaliths at Satanikota can be dated around 650 B.C. based on pottery types.

The date of the Cist-Circle type, can be only guessed as the two excavated tombs of this type did not yield even pottery. However, their architectural simplicity suggests a much later date.

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[1] Sundara A; *op. cit.*, (1975), p. 213.

[2] Deo, S. B., *op. cit.*, (1970), p. 14.

[3] Subrahmanyam, R., *op. cit.*, (1975), p. 206.

V. EARLY HISTORICAL (PERIOD II) AND MEDIEVAL (PERIOD III) PERIODS

A. CULTURAL SEQUENCE AND MAIN CHARACTERISTICS OF DIFFERENT PERIODS

Excavations carried out on the 'Village Mound'[1] revealed a three fold cultural sequence. Though the thickness of the entire deposits is hardly 1·60 m, the marked difference in the cultural components signifies their complete break in time between the three periods.

Period I : It is characterised by the presence of mesolithic tools. The tools occurred on the top of the high level gravel or travelled into the gravel to a depth of 10-15 cm due to local disturbance or rain water. The tool types comprise blades, points, burin on chert, chalcedony, jasper and a few on agate-nodule. Quite a good number of cores and flakes were found. Incidentally, such tools and flakes have also been recovered from the surface as well as in course of excavation on the 'High Ground' which has been dealt under the relevant chapter (see Chapter III). The tools are not associated with any other occupational remains such as pottery, bones etc.

Period II : Extending to an average height of 1·10 m above the Period I, it belongs to early historical time. A considerable time gap is represented in the form of a sterile layer of a redeposited *murrum*. During this period the site was fortified having a rampart and a ditch around it. The drawbridge for approaching the gate on the southern side is another remarkable discovery. Within the fort a series of baked brick structures. identified as granaries signify surplus agricultural production at that time. A solitary lead coin bearing the legend "Kumara Siri Sata" in Brahmi characters of *circa* 1st century A.D. is a unique numismatic find. It has not only put a seal of finality on the estimation of chronology of this period but has also thrown new light on the early Satavahana history. Among the other finds include beads of different variety of carnelian, agate, jasper, shell and glass. A tortoise shaped pendant in shell and a few beads are noteworthy for their association with the early historical cultures in various places in India. A beautiful double mould terracotta female head adorned with ornaments and the typical hair-do of the time is another prized possession of the site. Five ceramic

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[1] Here, we have confined our discussion to the periods of occupations recognized in excavation in the 'Village Mound'.

industries, all wheel-made were in use during this period. They are Russet Coated Painted ware, Rouletted ware, Black-and-red ware, Red-Polished ware and Red ware. Here, it will suffice to add that the occurrence of different wares in this period suggests the variety that was enriched by imports from Western India (Red-Polished ware). The site during early historical period was a small urban settlement, most likely an administrative headquarters of the Satavahanahara of the Satavahanas.

Period III : This period belonging to a medieval settlement has yielded typical pottery, glass bangles and beads of the period. The medieval copper coins are also associated with this period.

B. CHRONOLOGY

Satanikota witnessed a succession of human occupations right from the Middle Palaeolithic times to the Medieval Period, of course, with intermittent breaks. The dates of the Stone Age and the Megaliths have been discussed under the respective chapters. Here, only the chronology of the Early Historical and the Medieval Periods as revealed from the excavation at the 'Village Mound' has been dealt with. Early Historical level of the mound is designated as Period II while Period III represents the Medieval time. However, the earliest level, i.e. Period I in the 'Village Mound' belongs to Mesolithic Culture. Period II is dated to the last quarter of the 1st century B.C. to *circa* 3rd century A.D. The date of this Period has been fixed on the basis of the pottery, beads, terracotta human figurine, brick sizes, tiles, etc., besides a datable coin. Most of these objects are dated from extensive and well documented excavations.

Rouletted Ware was found in the earliest level of the lowest strata of Period II at the site. At Arikamedu this ware has been dated to the end of the first century B.C. or beginning of the first century A.D.[1] Its occurrence from the stratified deposit datable to 1st century B.C.—1st century A.D., beside other sites at Dharanikota,[2] Kesarpalli[3] along with amphorae and Russet Coated Painted Ware, suggests its association with Andhradesa in the 1st century B.C. Russet Coated Painted Ware also co-existed with the Rouletted ware. The beginning of the former is now securely dated to the second half of the 1st century B.C.[4] These two wares disappeared from the scene in Andhra Pradesh around *circa,* third century A.D. The absence of these wares from the Ikshvaku period (second quarter of third century A.D. to first quarter of fourth century A.D.) at Nagarjunakonda[5] and Kesarapalli[6] (Period IIIB) are very significant. Another datable ware from Period II at the

[1] *Ancient India,* No. 2, p. 24.

[2] *Indian Archaeology* 1962-63—*A Review,* pp. 1-2.

[3] *Ancient India,* No. 22, pp. 44-46.

[4] *Ancient India,* Nos. 13, p. 74.

[5] Personal observation.

[6] *Ancient India,* No. 22, p. 44.

site is represented by Red Polished Ware which appeared slightly above the earlier wares suggesting its late introduction at the site. It remained in vogue for another couple of centuries. Red Polished Ware was available at the early level at Kudavelli[1] (a site on the confluence of the rivers Tungabhadra and Krishna), and was also at Nagarjunakonda[2] from the Ikshvaku level.

Beside the ceramics, there are a few datable beads of this period. A circular tubular bead in agate (Fig. 47, 30, STK-646) is comparable with similar beads from Taxila,[3] Ahichchatra,[4] Kondapur[5] and Maski.[6] Their dates range from 1st century B.C. to 3rd century A.D. Barrel-shaped beads with lug collars and lenticular section (STK-486, 505 and 629, Fig. 47, 39 and 40) are dated between A.D. 100 to A.D. 350. At Kondapur, this shape is repeated in all the material and is considered as a general feature common from Andhra age, and the type seems to be very popular in the 2nd century A.D. throughout India.[7] A turtle-shaped pendant in shell (Fig. 47, 42, STK-721) is very interesting. At Taxila such pendants in garnet and mother-of-pearl, quartz and faience were reported and dated between 1st century B.C. and 1st century A.D.[8] From Kaundinyapur[9] and Bhokardan[10] turtle-shaped pendants were found from the Satavahana level. The earliest specimen in India in shell has been found at Prakash.[11]

Terracotta female figurines are very much similar to those found from Ter and Kondapur and recall their Satavahana technique in facial features, hair style and the head-dress.[12] The figurine was produced out of a double mould. This technique is Roman in origin and adopted by the Indians about the 1st and 2nd centuary A.D.[13]

Brick sizes (57 × 28 × 7 cm; 50 × 25 × 8 cm), from Period II at Satanikota are comparable with Peddabankur,[14] District Karimnagar, brick sizes (56 × 26 × 11 cm), from the Satavahana level. At Nevasa[15] almost identical size (58 × 25 × 7·5 cm), is reported.

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1 Personal observation.

2 Personal observation.

3 Beck, H. C., The Beads from Taxila, *Mem. Arch. Survey of India* No. 65, (Delhi, 1941), Pl. IV, 38

4 Dixit, M. G., 'Beads from Ahichchatra, U.P.' *Ancient India,* No. 8 Fig., 45, p. 42.

5 Dixit, M. G., 'Some beads from Kondapur', *Hyderabad Arch.* Series No. 16, (Hyderabad, 1952), p. 9.

6 *Ancient India,* No. 13, Pl. XXVII, 32.

7 Dixit, M. G., op. cit., (1952), p 2.

8 Beck, H C , op cit., (1941), Pl VII, 25 and 26, p 56.

9 Dixit, M G , *Excavation at Kaundinyapura,* (Bombay, 1968), Pl XLVIII, E , p 96.

10 Deo, S. B., and Gupte R. S., *Excavations at Bhokardan,* (Nagpur, Aurangabad, 1974), Fig 24, 144 and 145, p 137.

11 *Ancient India,* No 20 and 21, Fig 37, 31, p 115.

12 Deshpande, M N , *Lalit Kala,* No 10, p 56.

13 Deshpande, M. N., 'Roman Influence on Terracottas of the Satavahana period', *Summaries of papers of International Conference on Asian Archaeology,* (New Delhi, 1961), p 70.

14 Information from Dr V V. Krishna Sastry, Chief Technical Officer, Andhra Pradesh State Archaeology and Museums, Hyderabad.

15 Sankalia, H. D., Deo, S. B., Ansari, Z. D. and Sophie, *From History to Prehistory at Nevasa,* (1954-56), (Poona, 1960). p. 30.

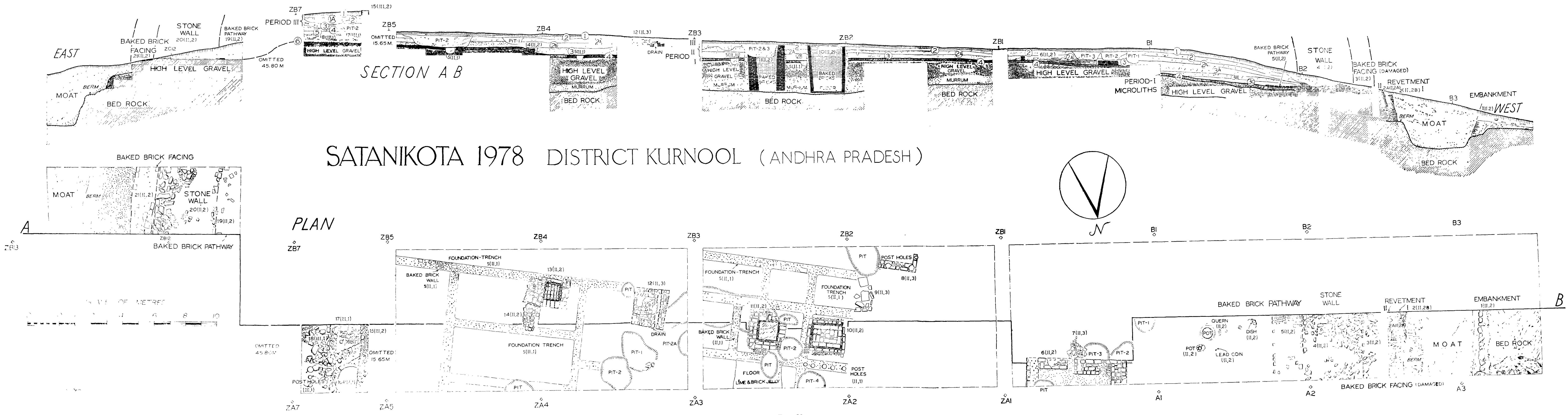
SATANIKOTA 1978 DISTRICT KURNOOL (ANDHRA PRADESH)
SECTION A B
PLAN
EAST
WEST
MOAT
BERM
BED ROCK
BAKED BRICK FACING
STONE WALL
BAKED BRICK PATHWAY
HIGH LEVEL GRAVEL
PERIOD III
PERIOD II
PERIOD-I MICROLITHS
OMITTED 45.80 M
OMITTED 15.65 M
REVETMENT
EMBANKMENT
MURRUM
DRAIN
FOUNDATION-TRENCH
FOUNDATION TRENCH
POST HOLES
FLOOR
PIT
PIT-1
PIT-2
PIT-3
PIT-4
QUERN
DISH
LEAD COIN
POT
A
B
N
ZB1
ZB2
ZB3
ZB4
ZB5
ZB7
ZA1
ZA2
ZA3
ZA4
ZA5
ZA7
A1
A2
A3
B1
B2
B3

Fig. 28

In the level ascribable to 100 B.C., bricks measuring 50 x 27·5 × 7·5 cm were used at Navdatoli.[1] The standard size of a brick of the time was 56-68 × 25-28 × 7-8 cm. It continued later along with smaller sizes (42·5 × 20 × 6 cm), at such places as Nagarjunakonda,[2] Bhokardan[3] (40 x 20 x 7 cm), etc.

Tiles with double perforations near the upper edges having 26·5 × 14 × 1·5 cm size are also reported from Bhokardan × (24 × 16×3 cm)[4], Brahmapuri × (25 × 14·5 × 2 cm)[5], and dated to Satavahana times.

A circular lead coin (Pl. LXII,I), was found about 15 cm above the earliest level and in close relation with a definite flooring.

On the obverse it bears at legend "Kumara Siri Sata" in Brahmi characters ascribable to 1st century A.D.[6] Kumara Sata was a scion of Satavahana family and was the son of Satakarni I (27-17 B.C.). Therefore, it is quite likely that Siri Sata looked after the administration of Satavahanahara in the 1st century B.C. and assumed the royal title after the death of his father. His coins with the royal title *Rajan,* dated to early years of 1st century A.D. are reported from Central India.

The upper date, *circa,* third century A.D., for period II at Satanikota is also justified from its comparison with Nagarjunakonda,[7] Kudavelli[8] and Kesarapalli.[9] All the sites flourished towards the close of the third century A.D. and the Rouletted ware, the Russet Coated Painted Ware and a few diagnostic pottery which evolved from common red ware, are conspicuous by their absence during this period. Tortoise shaped beads went out of fashion around 3rd century A.D.[10]

The deposit of 1·50 m and three to four structural phases of baked bricks are enough to cover the entire occupation of 200 years in Period II at the site, particularly, in view of the nature of the structure and the climatic condition which is not too moist.

Medieval Period-Period III-of the site began around 14th-15th century A.D. The pottery industries of this period are represented by plain and unslipped red, grey and deep black wares. The pottery in many respects is analogous to the medieval pottery from Maski[11] and Kudavelli.[12] Two specimens of glass beads with yellow matrix and a green coating outside found from Period III at Satanikota are comparable with the ones

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1 Sankalia, H. D., Subbarao, B, and Deo. S. B., *The Excavations at Maheswar and Navdatoli* (Poona, Baroda, 1958), p. 28.

2 Personal observation.

3 Deo, S. B., and Gupte R. S., *op. cit.,* (1974), p. 13.

4 Deo, S. B., and Gupte, R. S., *op. cit.,* p. 13.

5 Sankalia, H. D. and Dixit M. G., *Excavations at Brahmapuri* (Kolhapur) 1945-46, (Poona, 1952), p. 31.

6 Ghosh, N. C. and Dr. Ajay Mitra Sastri 'A Unique coin of Kumara Sata from Satanikota', *Numismatic Digest,* Vol. V, June 1981, pp. 8 ff.

7 Personal observation.

8 Personal observation.

9 *Ancient India,* No. 22, p.

10 Dixit, M. G., *op. cit.,* (1968), p. 97.

11 *Ancient India,* No. 13, Pl. XXII, pp. 83-85.

12 Personal observation.

found from Bahmani layers of Brahmapuri.[1] At the Kudavelli site a few medieval coins including those of Vijayanagar period have been found. From the same level, i.e. Period III at Satanikota, a stone plaque of Lakulisa and an image of Ganesa in stone betray medieval characteristic features. A coin of Shamsu'd-Din-Muhammad Shah Bahmani of Bidar (A.D. 1463-1482) and two coins of Alau'd-Din-Khalji of Delhi (A.D. 1296-1316) were found in association with other finds from this period at Satanikota.

To sum up, the periods at Satanikota 'Village Mound' may be dated as follows :

Period I	: Mesolithic
Period II	: Early Historical—from the last quarter of the 1st century B.C. to the middle of the 3rd century A.D.
Period III	: Medieval—*circa* 14th-15th century A.D.

C. THE CUTTINGS

Thirteen trenches were laid at Satanikota 'Village Mound'. A brief description of the cuttings with particular reference to the fortification, structure, lay out of the settlement, pre-and post-fortification remains and other important features is given below.

(i) STK-1 (Fig. 28, pp. XXVIII) :—

In this principal cutting the trenches were laid in grid pattern on the southern end of the village mound which was free from present occupation and marked by an *Idgah* on the south-eastern edge. It traversed the mound in east-west orientation and became the most informative in the sense that it had brought to light the fortification walls on both the western and the eastern ridges of the mound with the habitational remains in the intervening area. This layout of the cutting (preferred for connecting habitation and rampart) was guided by the name of the site–Satanikota or Satavahanakota or the fort of the Satavahanas– and the bricks laid running parallel to the longitudinal axis of the site on the western edge of the mound were noticed exposed on the surface.

Initially, quadrants I and IV of the trench ZA3 were taken up. On the same alignment the cutting was extended towards the east and the west.

The excavated portions covered an area of 560·25 sq. m.

The section line A—B running in east-west direction along the mid-baulk from the trench A3 is turned at right angles at two points in order to connect the maximum number of structural levels with the rampart on either end.

Before discussing the distinguishing features of the trenches and their notable finds the general stratigraphy of the cutting is referred to below.

The bedrock was represented by granite and was encountered in the trenches A1, ZA2, ZA3 and ZA4 at an average depth of 3·30 m from the surface. The bedrock was

[1] Sankalia, H. D., and Dixit, M. G., *op. cit.*, (Poona, 1952), pp. 103-104.

elevated in the centre with gentle slopes on the east as well as the west. It is hard and compact, medium to fine grained, and light grey to pink in colour and occasionally gneissic in appearance. It is traversed by North-north-eastern-South-south-western trending pegmatite and quartz veins.[1] The *murrum* found over the bedrock in the trenches ZA1, ZA2, ZA3 and ZA4 was weathered *in situ*. This greenish white *murrum* deposit was exposed to a maximum thickness of 0·70 m in the trench ZA3. The kaolinisation and subsequent removal of feldspar from the rock had brought out quartz grains in relief and the whole mass appeared as a grit deposit. But the position of quartz veins traversing the rock proved its weathering *in situ*. Resting unconformably over it was the gravel bed. The cobbles and the pebbles are loosely embedded in the matrix of ferruginous clay which had given the deposit its predominant red colour. The gravel was well sorted with the coarser material set in the lower horizon while the finer overlying it. Elsewhere, in this report, it is shown that 65% of the gravel were in well rounded, rounded and subrounded form and was deposited by a gentle stream. It is also conclusively proved that the gravel represented the high level gravel of the abandoned course ofthe River Tungabhadra. The average thickness of the gravel in this cutting as revealedf rom the trenches A1, ZA2, ZA3 and ZA4 was 1 m long after the deposition of the gravel the river drifted to north. The bed of the former river was first occupied during Middle Palaeolithic Age and later by mesolithic people. Their tools were mostly found on the top level of the gravel. The loose composition of the gravel might have allowed the penetration of the tools to this depth along with the rain water or some disturbance of local nature. The site remained unoccupied for a long time. The gap was indicated by the break in stratigraphy and in the culture as well. The stratigraphic break was represented by a sterile deposit of *murrum*. This *murrum* was a secondary deposit borne by the wind. Since the deposition and the removal of the *murrum* was going on simultaneously, the deposit was available in patches only in ZA7, ZA4 and ZA3 immediately above the gravel and before the beginning of the historical period. The deposits of the historical times were the early historical and the medieval periods. The penultimate accumulation was characterised by habitational deposit such as ashy loose earth containing potsherds, brick-bats, tiles, brick-structures, floor-levels, foundation trenches and 'ghost walls', and contemporary to these was the fortification. This was the most active period as far as the human occupation was concerned. The later pits had disturbed the habitation. The top deposits were almost denuded as a result of extensive robbing of the structural materials, quarry of earth and digging of manure pits by the present inhabitants of this erstwhile Satavahana fortified township. This cultural break, however, was not supported by any break in the stratigraphy.

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[1] In the Srisailam reservoir area the Archaean bedrock underlies the sedimentaries. 'Progress report for the field season, 1971-72, Geology of Srisailam Reservoir Area and adjoining Tract in Mahbubnagar and Kurnool District, A. P.' by N. V. B. S. Dutt, Geologist (Sr.), Geological Survey of India. This general stratigraphy was found disturbed in the 'Village Mound'. Here gravel overlie the granite. The Kurnool (Group) and Cuddapah (sub-group) are missing. However, beyond the north-east corner of the village mound along the River Tungabhadra and in the High Ground east of the 'Village Mound', Narzi massive limestone belonging to Kurnool system is exposed which is superimposed by the gravel.

In brief, the cutting revealed :

1. Stone Age—Period I.
2. Early Historical—Period II.
   (a) Western part of the fortification.
   (b) Eastern part of the fortification.
   (c) Habitation contemporary to fortification.
3. Medieval—Period III.

1. THE CUTTING PRESENTING THE STONE AGE

The pre-fortification or Period I deposit belonged to Stone Age.[1] As stated above, Stone Age tools were recovered from the top of the gravel and in general from all the excavated trenches. However, the finds from the trenches ZA7, ZA5, ZA4, ZA3, ZA2 and ZA1 may be mentioned in particular. Excepting stone tools such as scrapers of different variety, awl points, points, simple thick flakes on chert, jasper, agate and quartz of Middle Palaeolithic Culture and blade, points, burin, on chalcedony, jasper, quartz of Mesolithic Culture, no remains of any other form of occupation was available.

2. EARLY HISTORICAL PERIOD.

(a) The cutting presenting the western part fortification.

The cutting in the trenches A1, A2 and A3 had revealed the following features from east to west :

(i) A brick-bat laid pathway (STR-5) width 2·10 m.

(ii) Stone wall (STR-4) (width 3·80 m) of Cuddapah Stone-slabs of varying sizes.

(iii) Rubble walls (STR-2A and STR-2) were raised twice after the collapse of the original and regular brick facing of the stone wall. (The differences in the building levels and in the material used in the two walls need not be construed as a wide time gap between the two constructions).

(iv) A berm nearly 0·40 m wide was also a regular feature of the fortification.

(v) Beyond the berm the rock-cut moat was encountered. The cross section of the moat was roughly broad based with a short right arm. The top of the western escarpment was 0·80 m and the top of the eastern one was only 1·50 m above the floor of the channel, whereas 3 m depth was recorded in the middle. The width of the bottom and the top of the channel was 3·50 and 4·60 m respectively.

(vi) The embankment[2] (STR-1) on the lower western edge of the moat was the outer-moat construction of the fortification. Right over the top of the bed-rock

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[1] For detailed discussion—See *Supra*.

[2] The fortification and the important structures within it have been discussed in detail in the relevant chapter of this report.

a ledge was cut along the western edge of the moat to accommodate the boulders to use in the embankment. It was supported from the back by earth and store heap.

In all, five different layers have been recognised in the moat.[1] The lowest water-borne deposit lying at the base of the moat was accumulated when the moat was in use. The gradual silting, fallen debris of the fort wall and dumping of the then habitational refuse raised the level of the moat. But the channel continued to flow and deposit the clay silt. The channel was ultimately filled to its brim and sealed by the collapsed stones of the rampart.

(b) Cutting presenting the eastern part of the fortification.

On the eastern toe of the mound a wide and regular depression suggested a possibility of the moat and the fort wall on this side also. The cutting was extended and covered ZB12 and ZB13. It measured 12·40 m (east-west) × 4·25 m (north-south).

The features such as pathway (STR-19), stonewall (STR-20), brick facing (STR-21), the berm, the moat of the fortification on this side were all identical to the western side which are already described in detail. However, the eastern bank of the moat could not be properly traced.

The deposit within this part of the moat repeats the same story of the use and disuse of the moat which is narrated at length in the description of the cutting in the western part of the fortification.

(c) The cutting presenting the habitation contemporary to the fortification.

The habitation which flourished contemporary to the fortification (Period II) was the most important period of the site and noticed in all the trenches of the cutting except ZA7. The total accumulation of the period varied between a minimum of 0·60 m (Tr. ZA1) and a maximum of 1·40 m (Tr. A1). The entire deposit either rested on the redeposited wind borne *murrum* or exposed at top of the gravel. The habitational deposit, containing loose ashy earth, potsherds, animal bones, charcoal, brick-bats, beside minor antiquities, is divisible into three levels, associated in general with the three structural phases.

The habitation in the Period II began with the fortification. The stone wall (STR-4), the pathway attached to it, and a baked brick building (STR-6) were raised on exposed gravel and *murrum*. Belonging to this phase a huge structural complex was also recovered. However, this complex was systematically robbed and now the layout of the foundation trenches (STR-P) of the robbed structures and baked brick 'ghost walls' in the trenches ZA3, ZA4 and ZA5 were exposed. The foundation of this complex was laid in the gravel.

[1] The five different deposits in the channel of the moat for convenience sake was labelled as (1) to (5) but could not be correlated with inside habitational layers for obvious difficulties.

The pottery traditions included in plain and common wares are black ware, red ware and grey ware; in slipped varieties-black-slipped, red-slipped and chocolate-slipped, and in diagnostic industries Black-and-red ware, Rouletted ware, Russet-Coated Painted ware, Kaoline ware and Red Polished ware with its characteristic sprinkler form.

Included amongst the important antiquities are bangles of shell and glass; terracotta animal figurines; nails and other objects of iron; spiral, ring, rod and other objects of copper; beads of shell, glass and terracotta; an ear-ornament and pendant of glass; marbles; a legged quern; and the lead coin of "Kumara Siri Sata" (Reg. No. 106).

The structural phases 2 and 3 were associated with the upper layers. The second phase is mainly represented by a series of baked brick structures identified as granaries (STR-10, 11 and 13). The major part of these structures were below the then ground level. Contemporary to the granary (STR-13) was a baked brick platform (STR-14) unearthed in the trench ZA5.

To the third phase belonged a simple room (STR-8) and another room with concealed drain (STR-12) with a big stone-slab subsequently laid on its floor.

Minor antiquities from the upper level included bangles of glass and shell; beads of bone, glass, carnelian and terracotta; a dagger, nail and other objects or iron; bangles, spiral and other objects of copper; an ear-ornament of terracotta; and marbles.

As regards the pottery of the upper deposit, it may be observed that while the plain and common wares as well as the slipped varieties of the earlier deposit (3) had persisted with almost equal frequencies, but, amongst the diagnostic industries of the preceding deposit, only Black-and-red ware and Red Polished ware had continued with equal vigour.

3. MEDIEVAL

Period III or the Medieval Period of the site is represented by a thin deposit at the top. Pit activities, immediately underlying it, are also attributed to this period. The deposit was largely greyish in colour, and while its core was found to be hard, the upper and lower parts carried comparatively loose earth. It was a very thin deposit ranging on an average between 10 to 20 cm forming an uniform layer stretching from trenches A1 to ZA5. A few small pebbles alongwith some stone pieces were also encountered; brick-bats were seldom found.

In the trench ZA7 which was laid after leaving 15·65 m unexcavated portion, Period II was missing. Period I represented by layer (7) was equated to layer (4) of the eastern trenches of this cutting. In this trench, two phases of structural activity in stone belonging to Period III were encountered. The first phase of building activity was represented by a circular stone built structure (STR-16A) containing ash, walls, (STR-16B) and haphazardly paved floor (STR-18) and portion of a mud wall with a post-hole (STR-17). To the second phase belonged a jerry-built stone-wall (STR-15).

The pottery industries of Period III were distinguished by the discovery of plain black ware, red ware, grey ware, red-slipped ware and black-slipped ware of Medieval fabric and form. Amongst the antiquities mention may be made of a gold-ring, stone plaque

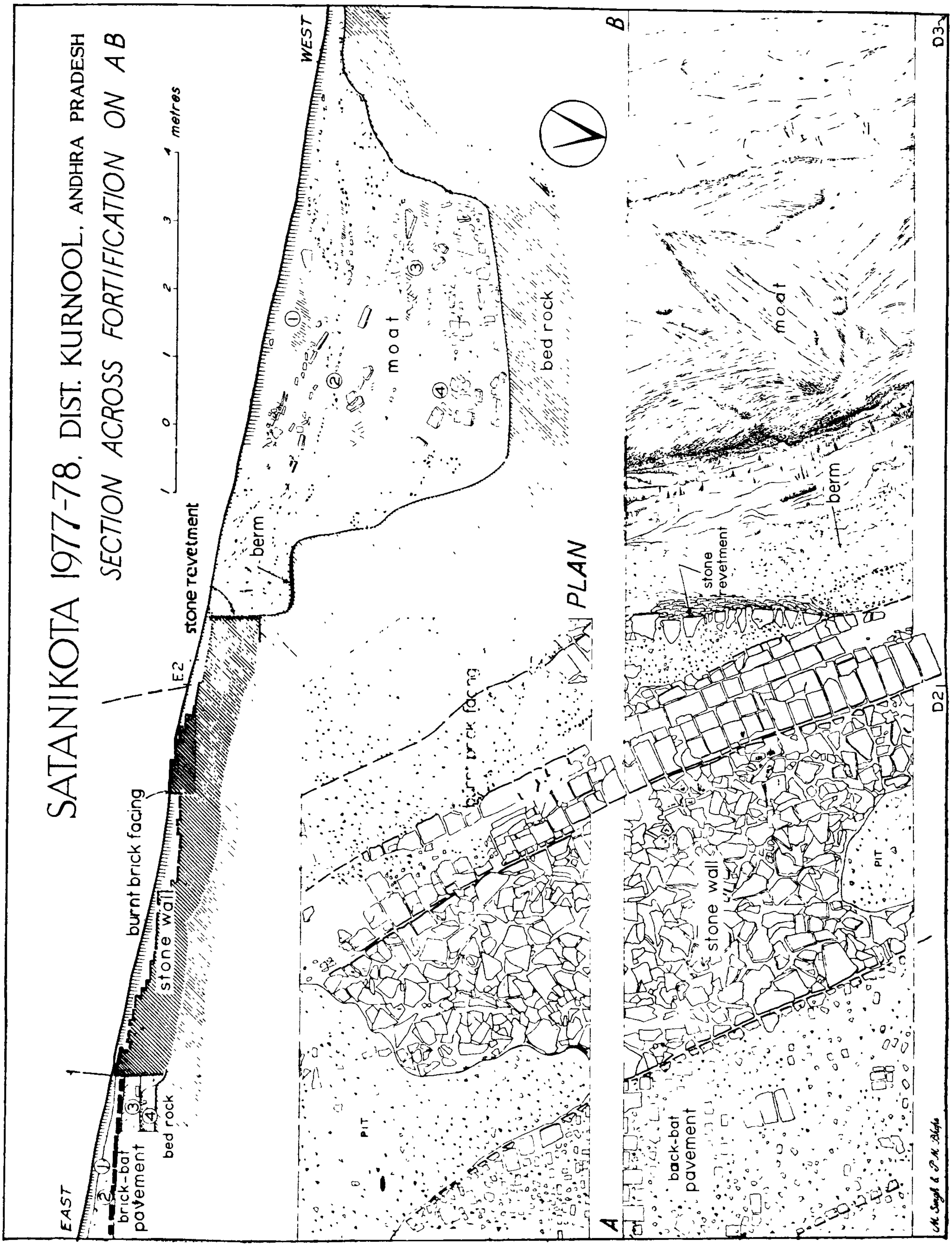
SATANIKOTA 1977-78, DIST. KURNOOL, ANDHRA PRADESH
SECTION ACROSS FORTIFICATION ON AB
metres
EAST
WEST
brick-bat pavement
bed rock
stone wall
burnt brick facing
E2
stone revetment
berm
moat
PLAN
A
B
D2
D3
PIT
back-bat pavement

Fig. 29

of Ganesa and terracotta human figurines besides, minor antiquities like, bangles of shell and glass beads of glass, carnelian; jasper and terracotta; rings of shell and glass; an ear-ornament of glass; nail; arrow-head; spear-head; ring and other objects of iron; bangles; ear-ornament; ring and other objects of copper; terracotta animal figurines; cart-wheel; votive-tank and lamp; and marbles.

(ii) STK-2 (Fig. 29; Pl. XXIX) :—

This cutting was laid where the mound on the south-eastern corner takes a gentle curve, primarily, to cross-check the evidence obtained from STK-1. It was oriented east-west and measured 25 m in length and 5 m in width. The eastern extension of the cutting was stalled by the *Idgah*. However, the trench was laterally extended by four quadrants, two on either side of the north and the south. The continuation of the fortification with all its components was traced in this cutting. Since it would not be extended into the heart of habitation due to *Idgah* the correlation of the rampart with different phases of the structural activity in the fort remained unattempted. The habitational deposit against the fortification and debris within the moat were treated separately. The foundation of the fortification was laid in the gravel, already recorded in STK-1. The contemporary deposit yielded artifacts ascribable to Period II of the site. The finds included beads of glass; terracotta; bangles of glass; shell and copper; terracotta animal figurine; a marble; iron nails and other objects. Among the pottery recovered from these layers were Black-and-red ware, Red Polished ware, alongwith the usual Red, black and grey wares.

The 2·10 m wide brickbat laid pathway (STR-22) was the first structure which was encountered from the west and had touched the inner face of the stone wall (STR-23) which also maintained its uniform width. The baked brick facing (STR-24) of the wall having 1·45 m width was found in a better state of preservation than the one already noticed in STK-1. A stone-slab built buttress (STR-25) was noticed on the western side of this brick facing. This might have been constructed either as a support to the damaged brick facing or as an additional protecting wall at this point where the rampart had taken a smooth turn. The berm remained as a distinguishing feature in this cutting also. The 3·90 m deep moat with steep faces and without outer embankment encircled the rampart. One of the most distinguishing features of the deposit within the moat was a 0·94 m thick loose, greyish water-borne laminated deposit. Besides debris fallen from the stone and brick walls of the rampart, it also contained the refuse of the then habitation, such as, broken pots, potsherds, fragments of iron slag, fragments of bangles, beads, etc. The total accumulation in the moat reached to a height of 3·90 m.

(iii) STK-3 and STK-3A, Gateway Complex, (Fig. 30, pl. XXX) :—

On the southern slope of the mound about 50 m south-east of the *Idgah* the contour lines on the map converged in a horse-shoe shape with its opening towards the outer periphery of the mound. The behaviour of the contours suggested a flanked depression

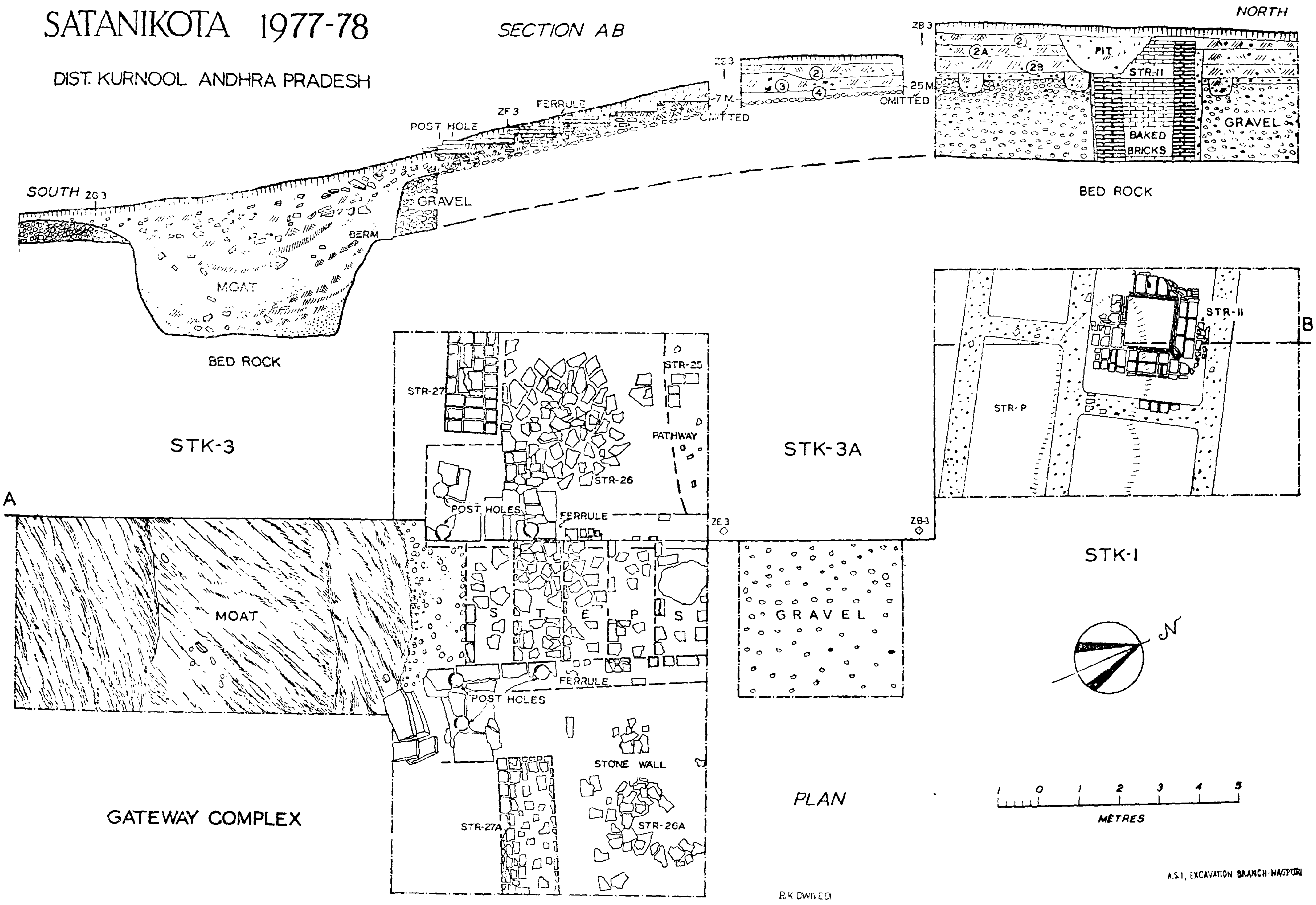
SATANIKOTA 1977-78
DIST. KURNOOL ANDHRA PRADESH
SECTION AB
NORTH
SOUTH
BED ROCK
MOAT
BERM
GRAVEL
POST HOLE
FERRULE
OMITTED
PIT
STR-11
BAKED BRICKS
STK-3
STK-3A
STK-1
STR-27
STR-25
STR-26
PATHWAY
POST HOLES
STR-P
S T E P S
STONE WALL
STR-27A
STR-26A
GATEWAY COMPLEX
PLAN
METRES
A.S.I. EXCAVATION BRANCH-NAGPUR

FIG. 30

(iv) STK–4 :—

This cutting was laid at a place where the mound takes a gentle bend towards north with a view to locate the fortification and particularly to examine novel features, if any, on this cardinal point. The south-east corner was well preserved, and sustained digging revealed only the regular rampart wall together with the moat. The trench could not be extended further inside habitation as the area was badly disturbed by deep pits dug in recent times by the present inhabitants of the village.

In all, the cutting covered an area of 4·25 × 20 m. The digging was started on the top edge of the mound and extended towards the foot of the mound. While the topmost quadrant yielded the remains of a pathway of brick-bats (STR-28), the next southern quadrant laid bare the remains of a stone wall (STR-29) without brick facing and built on the top of the exposed gravel deposit. Further down, the lower-most two quadrants were credited with the discovery of the extensive and deep rock-cut moat.

The moat was 4·28 m deep and 5·20 m wide here. The channel bed was flat with a dip towards the east. The composition and the sequential behaviour of the deposit within the moat do not exhibit any marked difference with the channel accumulation already noted in the other cuttings. The deposit (1·20 m), lying on the pathway, betrayed a habitational refuse which was disturbed by later pits. As stated above the cutting could not be taken inside the habitation.

(v) STK-5 (Fig. 31, A):—

A major portion of the mound is now occupied by the village. The cuttings were laid either on the edges of the mound to study the plan and constructional features of the rampart or in the open area available on the southern part of the mound. The extent and settlement pattern remained elusive. An intensive survey for laying the trenches in the village was made. Near the Kamarigudi Siva temple, in the north-western part of the village, a very limited area was available which was selected for probing. The cutting measured 4 × 2 m with longer axis oriented in the north-south direction. Nearly 1·50 m thick habitational debris was encountered. Except two small pits containing loose ashy stuff, pots and potsherds no other activity was noticed. This deposit like STK-1 rested on the top of the sterile *murrum*. The weathering had taken place *in situ*. The granite bed rock exhibits an undulating top.

(vi) STK-6 (Fig. 31, B) :—

Another available area in the midst of the present habitation was found near the eastern gate of the medieval wall inside the fortification. The gateway is still being used by the villagers. In the open space a 4 × 2 m trench with its major axis oriented east-west was dug to a depth of 1·30 m. The immediate purpose of this cutting was to examine the extent of the habitation, particularly, during Period II of the site.

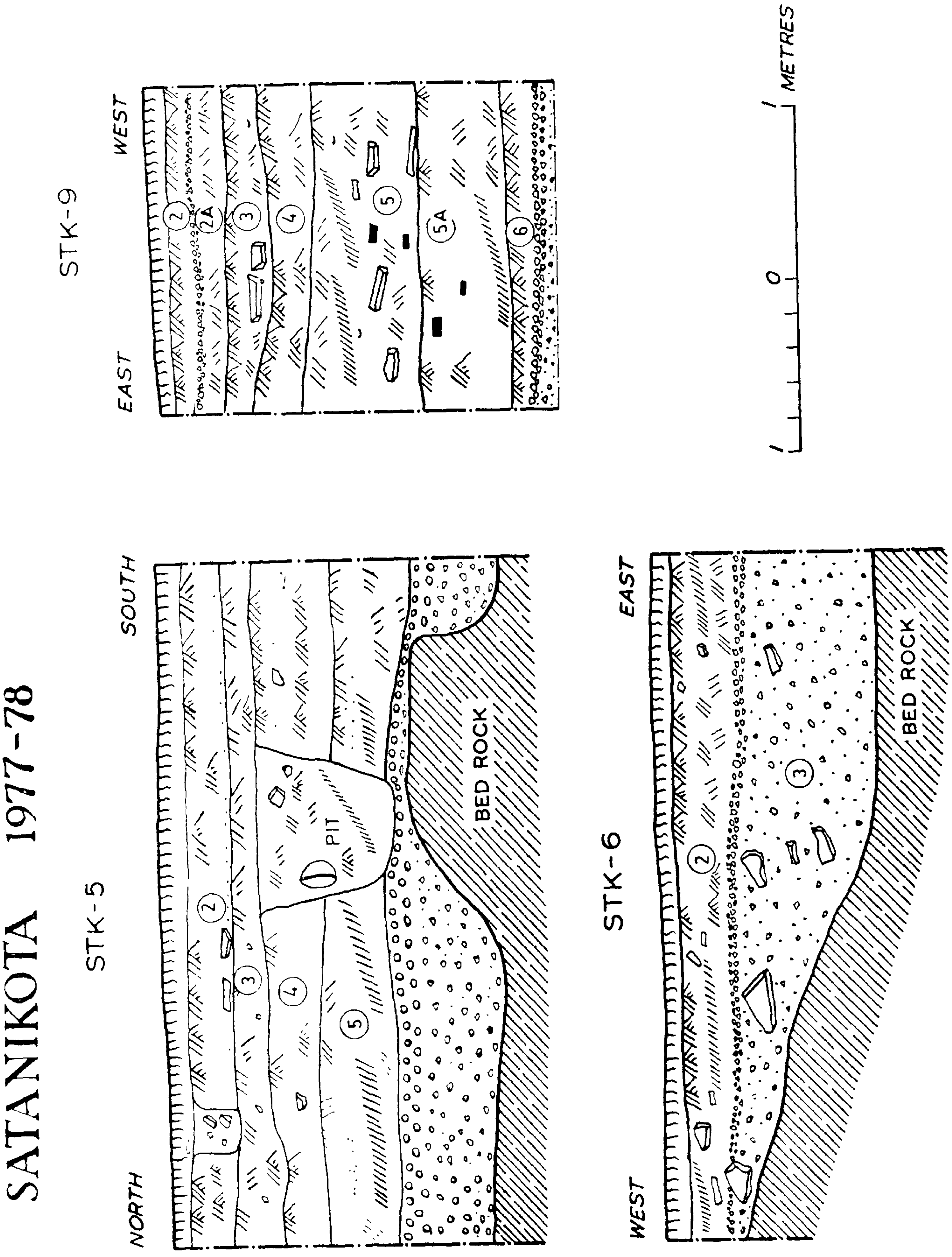
SATANIKOTA 1977-78
STK-9
EAST
WEST
2
2A
3
4
5
5A
6
METRES
1
0
1
STK-5
NORTH
SOUTH
2
3
4
5
PIT
BED ROCK
STK-6
WEST
EAST
2
3
BED ROCK
R.K.DWIVEDI

FIG. 31

The top most deposit yielded a mixed material belonging to medieval and early period. The next deposit designated as (2) however, yielded mostly red ware of utilitarian variety and ascribable to Period II of the site. These habitational remains rested on the redeposited gravel and limestone pieces which in turn rested on limestone bedrock. It is significant to note that this cutting established the extension of lime stone (Narzi) in the 'Village Mound'. Further expansion of this trench was not possible due to structures.

(vii) STK-7 (Pl. XXXI) :—

In order to ascertain the extent as well as the feature of the fortification complex a a cutting designated as STK-7 was laid on the eastern side of the mound where there is an abrupt drop in the gradient. The cutting marked the extremity of the mound on this face. It measured 13 m east-west and only 2 m north-south, which had to be restricted to that limit, as the area is thickly populated.

The cutting revealed the fortification wall in a very damaged state. However, the interesting feature this cutting revealed is that the rock-cut moat was absent here. The wall was built on the edge of the natural depression on the east without a provision for berm. The accumulation against the wall brought out evidences of flood deposit. This channel might have served as a moat. The cutting within the channel produced a varied deposit lying on the limestone bed rock at a depth of 3·36 m from the top. The rise of water level to the higher reaches and the damage caused to the fort wall on different occasions are well recorded. The time interval between the rise of different water levels upto the wall is also represented by two thin deposits of ancient humus. The stone built fort wall (STR-30) was found in a very damaged condition. Its northern face could be exposed. However, the nature and layout of this stone built wall betrayed its link with the stone built rampart wall with baked brick facing. This brick wall was completely destroyed and remained in the form of a widespread debris encountered in the lower most deposit. In order to protect the main wall a stone wall (STR-31) was raised. This wall was also affected by subsequent floods. Another stone wall (STR-32) was raised. That the area was prone to floods and so remained under constant vigil, is evident from the flood deposits, repairs and the two protective walls.

(viii) STK-8 :—

This small cutting (2 × 2 m) was taken for probing the vicinity to determine the extension of the settlement inside the present village. This trench was laid on the southern edge of the village and at a distance of about 25 m north of the cutting, STK-1. The total accumulation of 3 m rested on the top of the exposed gravel. A rammed floor or earth was found 15 cm above the gravel. Some stone pieces were found on the floor besides a few (?) red ware of utilitarian nature of Period II at the site. The loose earth, brick-bats and stones in the form of a thick deposit of 1·20 m had been found on it. Above this deposit a thin made-up floor was encountered with a scatter of brick-bats on it. The deposit above this consisted of ash, loose earth and mud clod lumps and significantly, was of uniform nature.

The Period II cultural *milieu* continued still higher but almost petered out when the accumulation reached 2·60 m height from the basal deposit. The remaining 0·50 m deposit represented the medieval occupation of the site. An open mud-lined hearth along-with ash and charcoal was found on a rammed floor level. The intervening 0·20 m thick loose fine earth almost bereft of any habitational remains accumulated on the gravel surface and might represent the stratigraphical break between the Early historical (Period II) and the Medieval Period (Period III) of the site missing in the main (STK-1) as well as in other cuttings.

(ix) STK-9 (Fig. 31, C) :—

In search of the settlement pattern, particularly, of Period II of the site, this trial trench was laid nearly 70 m south-west of the Kumari Gudi, the Early Chalukyan temple in the village. The space available within the standing structures was limited which restricted the operations (2 × 2 m) within the trench. In this cutting, a 2·25 m thick deposit was found resting on the gravel which yielded early historical pottery except for a thick layer of 20 cm from the top. It contained medieval as well as early historical remains. Part of the deposit was obviously not *in situ*. At least, two floor levels were encountered in it. Twenty centimetres above the gravel the first floor, yielding ash, charcoal and early historical pottery was encountered. The second floor was 25 cm below the surface. This floor of rammed earth was found along all the sides of the section, which naturally suggest that the mid-portion of the floor was pierced through during excavation. It could not be related to the structure, as further extension of the cutting was not possible.

(x) STK-10 (Pl. XXXII) :—

On the north of STK-1, further probing of the fortification was made. The stone wall (STR- 33) of the rampart was traced but the original width of 3·20 m of the wall was found enlarged in this cutting and here, it measured 3·90 m. The brick-facing as well as brick-bat laid pathway along the inner line of the fortification wall were found damaged, the latter, however, could be traced to some extent. The berm was well marked. The depth of the moat near the inner edge was deeper than the outer edge. In order to retain the water in the moat, a baked brick embankment (STR-34) was raised on the outer edge. The exact layout of this embankment could not be retrieved as it was very badly eroded. The deposit within the moat was varied and retained the history of the fortification in particular, and Period II of the site in general, very faithfully. The cutting could not be pushed into the heart of the ancient habitation due to modern standing structures.

(xi) STK-11 :—

An 'L' cutting on the eastern periphery of the mound was laid with a view to record the structural features of the fort-wall to the north of STK-1. The ground was

badly disturbed due to indiscriminate digging by the present inhabitants. The cutting was limited also due to standing huts, houses and a latrine of the villagers. The continuation of the stone wall (STR-35) and brick-facing (STR-36) was traced. Both the components were in a very bad state of preservation.

(xii) STK-12 (Pl. XXXIII) :—

The fortification wall and the moat, first traced in the cutting STK-1, were further traced towards the north and along the periphery of STK-10. The outline of the rampart and the rock-cut channel was followed and it was observed that the marked feature on the ground abruptly ends against the rock face. In order to check the behaviour of the defence in this corner· a cutting STK-12 was laid. The modern habitation and a renovated early standing temple prevented further extension of the cutting. The moat here maintains a width of 3·50 m. On the outer (western) edge of the channel a stone wall (STR-37) of 2·10 m width was raised. The purpose of the wall was to retain the water in the moat. The inner (eastern) embankment was marked by a brick wall (STR-38) having offsets. Nearly eight courses were exposed. The overlying temple plinth did not allow further probings. The deposit within the moat is free from fallen debris such as stone and brick-bats. It appears that the fort wall, which is concealed under the modern structures, was unusually away from the moat, and probably kept in a good state of preservation. The brick work in offset is represented in the cutting as a part of the structurel complex in between the wall and the moat, and from the overlying moat deposit it is evident that the structure remained submerged in the channel.

(xiii) STK-13 :—

The eastern flank of the rampart which is now concealed under the medieval fort-wall is standing to a height of 2·50 m with a gateway facing east. At present it serves as a normal thoroughfare for the villagers. A very restricted area towards the north of this gate and behind the modern mosque was available for digging. At this spot, an east-west oriented trench 2·50 × 10 m was laid. Excavation revealed rather truncated remains of the rampart and a natural ditch instead of the rock-cut moat, (STR-39) and its major portion is buried under the standing wall. The stone wall (STR-39) showed up eleven courses (0·70 m height) and covered the entire length of the cutting of (4·25 m) 3·20 m width. As usual the stones of the wall were Cuddapah stone-slabs (STR-40). This wall was available here in five courses and 0·40 m height was also laid bare. Subsequently this wall was damaged by the surging waters of the flood. Another wall (STR-40A) of brick was raised on the debris of the earlier wall. The new wall stood abutting the former brick wall. The natural depression enclosed the defence wall which received water from the higher reaches and also from the flood water of the river whenever it reached to that level during the flood. In recent years also, the flood water had submerged this side of the mound. The fury of the flood had caused repeated damages on this side of the rampart. The cutting

cutting bore ample evidences of these ravages and support the testimony of STK-7 already recorded.

D. DEFENCES, STRUCTURES AND BUILDING MATERIAL

(1) Defences :

It has been already mentioned that after the discovery of the rampart and the ditch in the cutting STK-1, another nine cuttings were laid to find out the complete layout of the defences. It was found that the fort was built on a promontory. The rolling terrain, immediately around it, was seven-eight metres lower than the flat top of this eminence. The fort was almost elliptical on plan. (Fig. 32). The north-south longer axis at its longest measured 300 m, and the east-west breadth at its widest was 87 m. The total area of nearly 5 hectares was covered by this fort. It was enclosed by a stone-wall (3·20 m wide) built of Cuddapah stones quarried near the site. The stone-slabs, irregular in size and thin in section, were laid in mortar. The rugged external face of the wall was made well with baked brick facing of 1·45 m width (Pl. XXXIV). Except the parts of north and north-west flank the rampart was defended all around by a wide, deep and wet moat. Taking in conjunction with all the cuttings on either side of the STK-1, it is possible to estimate the original size of the ditch as something like 4 m wide at the top and 2 m at the bottom (a broad based 'U' in cross section) and 3 m deep with steep sides (Pl. XXIX, XXXV). Chisel marks in the moat is a fine testimony to the hard and subtained work of the stone cutters to scoop out the channel from a hard living rock. This cutting itself was a great engineering feat at the time when the use of explosives for blasting rocks was unknown. As the rock was sloping in a smooth gradient, naturally, the outer edge of the moat was lower than the inner edge. Therefore, in order to make the two sides equal, a low embankment of stone boulders and slabs was raised on the outer edge of the channel (Pl. XXXV). This feature was noticed mainly on the western flank. On the north-east side and from the STK-13 towards the east, a natural channel worked as a moat. In fact, it served as a feeder canal to the moat. Mostly, the rain water and occasionally the flood water entered into the moat through this depression. The deposits within the moat also indicated its wet character. The outer edge of the moat retained by embankment of Cuddapah stone-slabs stopped against the rock in the north-west corner (Pl. XXXIII) and its corresponding end was in the STK-7. The remaining portion of the bend of the fort in this part was protected by the River Tungabhadra and the vertical rock. The brick facing normally seen on the outer face of the stone rampart here remained as a parapet wall of almost same width on the edge of the escarpment. The river flows nearly 9 m (April, 1978) below the base of the wall (Pl. II). Intercepted between the moat and the base of the wall was an open gallery or berm. It was mainly recorded in the southern and northern cuttings laid along the periphery of the mound. However, whether the berm really played its normal role in the defense at that time is very difficult to conjure. It is for the first time the berm was noticed in an early Indian fort. One of the entrances was located on the south. This southern gateway

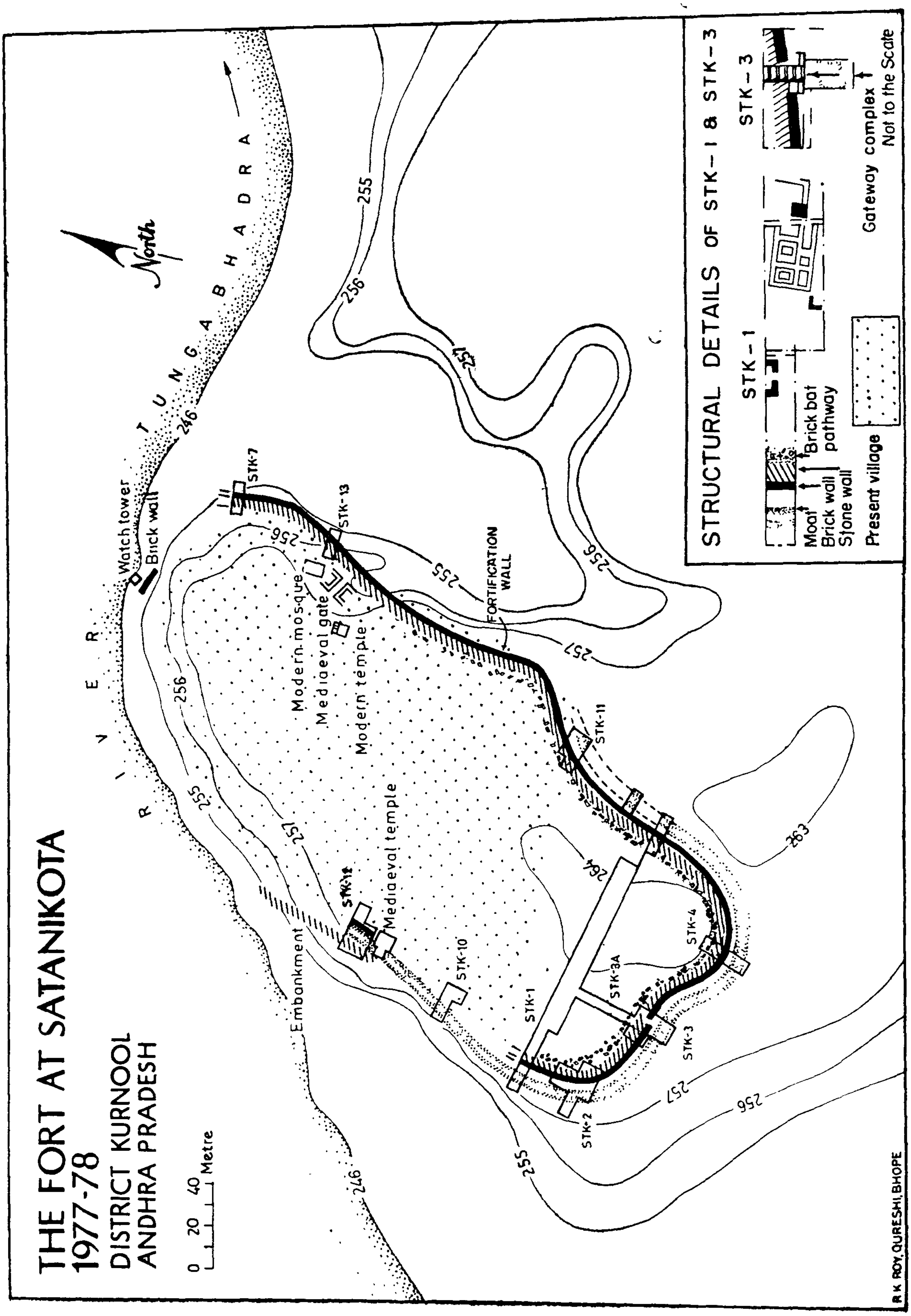
THE FORT AT SATANIKOTA
1977-78
DISTRICT KURNOOL
ANDHRA PRADESH
0 20 40 Metre
North
RIVER TUNGABHADRA
Watchtower
Brick wall
Embankment
Modern mosque
Mediaeval gate
Modern temple
Mediaeval temple
FORTIFICATION WALL
STK-1
STK-2
STK-3
STK-3A
STK-4
STK-7
STK-10
STK-11
STK-12
STK-13
246
255
256
257
263
264
STRUCTURAL DETAILS OF STK-1 & STK-3
STK-1
STK-3
Moat
Brick wall
Stone wall
Brick bat pathway
Gateway complex
Not to the Scale
Present village
R K ROY, QURESHI, BHOPE

FIG. 32

(Pl. XXX) had a flight of five steps with a width of 3 m and flanked, by north-south running brick walls (0·30 m). Small flat stones of irregular sizes have been used for paving the tread (1·20 m), the edges of the riser (0·20 m) have, however, been dressed with bricks. The lower two steps flanked by blocks of dressed limestones and at least three courses of these blocks were still present at the time of excavation. On the southern end one of these blocks have a pair of roundish sockets, 30 cm in diameter, which are evenly distributed on either side. About 1·80 m north of the above pairs of post-holes, another two post-holes of same dimension, one on each side of the steps were noticed. These post-holes were probably meant for heavy wooden posts which carried pullies on the top that were instrumental in lowering or lifting up the drawbridge over the moat. This conjecture seems to be appropriate as the evidences for permanent arrangement to negotiate the gate over the moat was not available. On either side of the third step from the bottom there was one socket with iron casing on each side, probably meant for the two door leaves. However, only one such iron casing was found on the left side of the third step.

Great attention was paid in the maintenance of defences. The rampart wall had undergone several repairs. In STK-1, the brick facing was damaged and the breach was restored twice by undressed stone blocks. In STK-2 the curve of the wall was strengthened with rammed earth and retained by a stone wall. The fury of flood on the north-western end of the wall was evident in the cutting STK-13 and STK-7. The brick facing in the former was found repaired and extended at least twice after the first construction. The rampart became ineffective within 200 years of its construction. During 7th-8th centuries A.D., a temple was constructed on the north-western corner of this mound. The foundation of the temple was laid almost on the top of the rampart overlain by thick debris (Pl. XXXVI).

The strategic importance of this elevated land on the River Tungabhadra was also recognized during the medieval period. It was again fortified at that time. The stone wall standing to a height of 3 m is still available on the eastern periphery of the mound (Pl. XXXVII). The wall almost stood on the earlier rampart in general but the deviation is very well represented. The gateway attached to this fort on the east having huge stone jambs with a provision for double doors, though now in ruined condition, is still being used by the villagers. The inset guard rooms on either sides of the entrance is typical of the medieval fortification. Probably this might be the same impregnable Satanikota fort which was attacked and conquered by Somadeva, the Aravidu chief, whose conquests are referred to at length in *Narapativijayam* or *Ramarajiyam* written by Nandugula Venkayya the poet laureate of Ramaraya, the son-in-law of the Tuluva emperor Krishnadeva Raya (A.D. 1509-30) of Vijayanagar.

(2) Important Structures :

Inside the fort a very limited area was available for excavation due to the set up of present village which is extensive and very thickly populated. Excepting a few ricketty ones from the Period III most of the remains of brick and stone structures were found only

from Period II. No such activity was found from the Period I. Brick was the main building material for houses and other constructions. Bricks were carefully prepared out of mould with sharp edges. The key mark on the bricks, however, was not available. Two sizes of bricks were in use. The bigger (57 × 28 × 7 cm), were mainly used in the fortification while the smaller (50 × 25 × 8 cm) were found in the buildings inside the fort. Cuddapah stone-slabs in undressed state were used in the fort wall. The undressed stone boulders were employed mainly in later repairs of the rampart. The lower flanks of the gateway on the south was bounded by dressed limestone. These blocks were very carefully prepared and the holes in it were used for fixing posts. The bricks and stone-slabs were all laid in lime mortar. Though no particular bonding method was followed in laying bricks, the builders were cautious enough to break the joints between the courses.

The building and rebuilding of the structures constitute three major phases of construction during Period II. As this evidence was recovered in a very limited scale its universal application to this period's long occupation of two hundred years may not be conclusive.

In the first phase a very extensive building complex was raised. Unfortunately, the building was completely pulled down and bricks of these structures were systematically robbed. The plan of the houses were retrieved only in form of the foundation trenches of the robbed walls and bits of baked brick 'ghost walls' (Pl. XXXVIII). The chambers were designed in series and adjacent rooms had common walls. The rooms were neither inter-connected nor was there any evidence of doors. The absence of doors indicates two probabilities, either these might have been used as stores with access from the ceiling, or the door jambs might have been above the ground level which were removed in course of brick robbing. The thickness of the outer walls (foundation trenches) (STR-P) were 0·65 m whereas the partition walls were only of 0·40 m. The depth of 0·44 m of the foundation trenches were uniform and filled with *murrum* and small pellets of *kankar*. Their layout revealed that the apartments were of two sizes. The bigger ones measured 7·50 × 3 m and confined to the east of the smaller series which measured 2·50 × 2 m. It was from the baked brick 'ghost walls' found on the foundations that the nature of the wall on them could be established. The bricks were not laid inside the foundations but on top of the same. The rammed packing had served as a firm base for the standing walls as the loose gravels were not suitable for carrying the load of heavy brick walls.

The nature of the complex could not be known. It is, however, apparent that the structures were very systematically removed and the building materials were probably reused. The level was free from debris.

In the second phase a series of granaries (Pl. XXXIX), with their major portions below the groundl evel, were built. A brick house was also built in this phase The structures were mainly found in the cutting (STK-1). Nearly 40 m east of the rampart this house (STR-6) (Pl. XL) was raised. The major axis of the structure found within the cutting was east-west oriented and covered a length of 4·80 m. Only three courses of the wall having 0·30 m height were found in a dilapidated condition. On plan the bricks were laid in two stretchers followed by a header and thus, the width of the wall, including its mortar, measured 0·90 m.

The floor was paved with stone-slabs and a few of those stones were available. An opening of 0·48 m in the southern wall with dressed facing on either side of the passage was meant for the door. From the same level a socket prepared on brick-bat was found. This was probably used to regulate the door-leaf.

The first granary (STR-10) (Pl. XLI) was located at a distance of nearly 12 m east of the house. This structure was rectangular on plan measuring 2·10 × 1·60 m internally. The floor lying at a depth of 2·96 m from the top most extant course was paved with complete bricks in single course. On all the four sides of the granary bricks were laid in offsets, narrowing the structure gradually as the brick courses went down. The extant courses of such bricks were 37. The floor occupied 2·55 sq m. The floor, as well as the walls, were not plastered but the joints between the bricks were very nicely finished. It was covered by a tiled roof as evident from the tiles with double perforations on the upper margin and the iron nails used for fixing the tiles with the rafters found in large number in and around the structure. A few tiles and side-walls at different levels carried burnt marks.

The important objects found inside the structure included tiles, brick-bats, iron nails, a few potsherds and earth.

The second granary (STR-11) found only 1·45 m to the east of the former was identical in shape and construction to above. It was, however, almost square on plan (1·40 × 1·38 m) and the depth was 3 m from the top-most course. The floor, unlike the former granary, was right on the bed rock without brick flooring. This structure yielded a good number of complete pots containing ashy deposits and bone pieces of birds. It was also covered by a tiled roof.

The third granary (STR-13) was 11·90 m further east of the second one. It was also square on plan, measuring 1·10 × 1·20 m. The floor covered an area of 0·90 sq. m. at a depth of a 4·10 m from the top most brick. Its bottom was paved with brick-bats. A working platform (STR-14) was attached to its eastern wall. Except this platform this structure in every respect was similar, including the tiled roof, to all other storages of this group.

Remains of two single roomed structures STR-8 and STR-12 were recovered from the third phase. The first of these rooms having two post-holes on the north-south wall and one on the east-west wall were found on bricks. The width of the wall was fully preserved and measured 0·56 m; in this wall stretcherwise bricks were laid side by side, thus the width measuring double the width of a brick. The second structure (STR-12) measured 2·20 × 2·50 m and only five courses of this structure were extant. This cell was provided with a drain (Pl. XLII). At a later stage the floor was covered with a flat stone which was used as floor-slab. The post-holes were also noticed on three corners, the fourth one was damaged by a pit. Thus this almost square chamber carried a roof on four poles.

After several centuries the habitation was again resumed in the fourteenth and fifteenth centuries. The houses on this portion of the mound were probably outside the medieval fortification. Bricks were not employed in these squalid structures. The walls and the floors of this period were either of stone-slabs or mud. The major remains of this period in two phases of building activity were recovered mainly from the eastern part of the cutting STK-1 (Pl. XLIII). A stone wall, north-south oriented, (STR-18) was found

associated with a mud wall (STR-17). Only four courses of the stones were extant and some five to six post-holes were noticed in the floor level attached to the stone wall. To this phase also belonged a circular stone structure—(STR-16A), and a east-west stone wall (STR-16B) in a damaged state. The second phase was represented by a lone stone wall (STR-15), oriented north-south, available to a length of 1·10 m. While discussing the various cuttings it has already been stated that the structural remains could not be located while probing inside the village.

A Note on Granaries :

The STRs 10, 11 and 13 were referred to as granaries without any evidence of grain in those structures. Similar structures from many sites were variously referred to as storage of valuables, *Pataras* or *Kanajamu,* in Telugu, used as grain stores,[1] vats for dyeing,[2] sacred kund or repertory of flowers, articles used in worship,[3] soak-pit[4] and cistern.[5] In Andhra Pradesh *Pataras,* the grain stores, built below the ground level are still in vogue. A few such *pataras* have been recorded from the village Satanikota itself.

A Note on the brick, tiles and other building materials :

Moulded, well baked bricks in two sizes were used in the constructions of Period II. The larger bricks, 57 × 28 × 7 cm, were used in the fortification while the smaller ones, 50 × 25 × 8 cm, were mainly confined to walls and floors of the structures inside the fortification. The bricks with almost former dimensions were reported from Peddabankur[6] and Nevasa[7] and appear to have been popular in the period concerned. The later sizes were present at Salihundam,[8] Maheswar and Navdatoli[9] in the level dated to early centuries of Christian era or a century earlier, the time when Satanikota Period II was flourishing.

Cuddapah stone-slabs were popular building material. These stone-slabs were quarried near the site. In Period II the slabs were used with baked bricks as well as independently. Their major use was, however, confined to the fortification and to the floorings of the room and staircases. Undressed boulders were used mainly in the repairs

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[1] *Kondapur* published by the Director of Archaeology, Govt. of Hyderabad, 1953, p. 3.

[2] *Ancient India,* No. 2, p. 27, 31; Pl XXIB.

[3] *Indian Archaeology, 1960-61—A Review,* pp. 39, 40, Pl. LXIVB and LXVA. K. G. Goswami, *Excavations at Bangarh* (Calcutta, 1948) pp. 10 & 11.

[4] Dixit, M. G., *Tripuri,* (Saugar, 1955), p. 29.

[5] Indian Archaeology, *1964-65—A Review,* p. 25 Pl. XXA

[6] Information from Dr V V. Krishnasastry, Chief Technical Officer, Andhra Pradesh State Archaeology & Museums, Hyderabad.

[7] Sankalia H. D., *et al, op. cit.,* (1960), p. 30.

[8] Subrahmanyam, R., *Salihundam.* (Hyderabad, 1964), p. 29.

[9] Sankalia, H. D., *et al., op. cit.,* 1958, p. 28.

of fortification and in raising the height of the outer-embankment of the moat or in such similar heavy and rough works. Neatly dressed stone blocks of limestones were found on either flank of the lower half of the southern gateway. The skill and perfection of the stone-cutters either in hewing the moat or in dressing the blocks of limestone or in quarrying the Cuddapah slabs betray long traditions.* The stone-cutters of Megalithic period had reached a high watermark in their job. The sockets and post-holes carved on brick walls and stones either for carrying posts or doors were recorded and referred to in course of discussion of various structures. A brick-bat with a central depression was also found which was probably meant for door-socket. An iron ferrule was found *in situ* at the gate.

In Period III, the bricks were not found in the excavated structures but only the use of stone-slabs continued for the buildings.

Considerable number of tiles have been found at Satanikota. They occur mainly from Period II, i.e. from Satavahana levels in three major shapes :

(1) Perforated, (2) Convex, (3) Eave, and (4) Finials (Pl. XLIV).

(1) Perforated tiles : Several tiles, measuring $26{\cdot}5 \times 14 \times 1{\cdot}5$ cm were found along with a large number of iron nails. These tiles are rectangular on plan and have two shallow channels on upper surface for easy flow of rain-water. The groove on the under side was probably for a better grip in the adjoining tiles. There are two perforations at the upper end of the tile for inserting iron nails. The tiles are generally of coarse clay mixed with straw and sand. A thin lime plaster was also noticed on the exposed portions of the overlapped pieces. The constructions which supplied such tiled roofs might have had wooden posts. Thus it is evident that wood or bamboo was also used as building material.

Similar type of tiles have been reported from the Satavahana levels at sites like Brahmapuri[1] and Bhokardan[2], etc. and their use continued at least upto 4th-5th century A.D. in Andhradesa. The later use of this type was found from the excavations at Nagarjunakonda.[3]

(2) Convex Tiles : A few fragmentary convex tiles were found at Satanikota. Mostly mid-portions of the tiles were available. Only the upper part of this tile generally has five grooves for easy flow of water while the rest of it is plain. Its undersurface is rough. Their complete measurements could not be taken but the available fragments indicate that these were portions of big-sized tiles. Probably these were used as ridge tiles to close the apex of the gable roof and to prevent the low of rain water through the junction. These are 3 cm thick and made of coarse clay mixed with grit.

(3) Eave Tiles : These tiles are rectangular and flat with bevelled edge at one side. At this bevelled edge there are three grooves arranged diagonally. They are also made of coarse clay mixed with grits. Their thickness ranges from 1 cm to 1·5 cm. A solitary fragment of eave tile was found decorated with slanting line designs.

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*Note:—The stone cutting was continued in the vicinity of the village, even during sixth-seventh century A.D. (*Supra*, p. 28).

[1] Sankalia, H. D. and Dixit, M. G., *op. cit.*, (1952), p. 31.

[2] Deo., S. B. and Gupte, R. S., *op. cit.*, (1974), p. 13.

[3] Personal observation.

(4) Finials : Very few finials were obtained from the excavation. Most of them are in coarse red ware, and on two of them, lime plaster was noticed. Some of them were furnished with flanges and tiers. At Arikamedu[1] these finials are associated with the pre-Arretine and Arretine layers. Excavations at Kondapur have yielded similar finials belonging to the Satavahana period, several of which are preserved in the site museum.[2]

Metal mainly iron in the form of nails with round or square heads were used for fixing tiles to wooden rafters. In one case an iron socket was found near the southern gate of the rampart.

E. POTTERY

(a) **Introduction**

Despite the beginning of human activity at Satanikota from Stone Age (Middle Palaeolithic and Mesolithic), pottery is encountered only during the Megalithic and the Early historical period (Period II). The megalithic pottery is dealt with separately. This period is remarkably rich in pottery. The pottery from Medieval period (Period III) is quite distinct in character, form, fabric and separated from the earlier period by a considerable gap of time. The entire group is wheel-made. The characteristic features of each group along with the types represented therein are described in detail under respective places. Here, without going into detail, the general features of pottery in each group is discussed.

The early group (Period II) is characterised by six principal industries—(1) Red Ware (2) Black Ware (3) Black-and-red Ware (4) Russet Coated Painted Ware (5) Rouletted ware and (6) Red Polished Ware. Pottery from the lower level of this period accounts for only 18·75% of the collection while the rest is confined to the upper half. Significantly, the Black-and-red Ware from the lower level betrays the megalithic tradition more prominently than that of the upper level in Period II. The Rouletted and the Russet Coated Painted wares were introduced earlier than the Red Polished. The Red Polished Ware alone survived after the disappearance of the other two ceramics from the scene. However, their presence in small percentage in the entire collection indicates their deluxe nature and suggests that they were not locally manufactured. The occurrence of Red Polished Ware obviously indicates a transaction with the western India, the home of Red Polished Ware. It is interesting to note that the clay used in the preparation of Black-and-red and the Rouletted Wares were one and the same. The spectrographic analysis has revealed that the clay of both of the wares contains similar minerals. The detailed report is given as Appendix I in this chapter. The Black-and-red effect on the pottery was not only due probably to inverted firing as is evident from the various combination of black-and-red effect in and outside of the pot. It has also been noticed that the

[1] *Ancient India*, No. 2, p. 91.

[2] Personal observation.

black and red effect on the pottery was the result of an application of some organic slip in the desired portion of the pot before firing. The applied portion of the pot was found black. The utilitarian types were turned out in red ware including in slipped variety. The big size jars are decorated profusely with spoked wheel, triratna, festoon, etc. designs and suggest their use in rituals.

The Red slipped ware is prolific in Period II with almost all the types of domestic use and represent a common ware of the people at large. It is mainly of medium to coarse fabric.

The pottery from Period III is ascribable to the medieval period and comparable in certain forms and fabrics including some designs with those at Maski. Medieval coins are also recovered from this period. The pottery is characterised by black and also in ashy grey burnished surface in medium to coarse fabric. With heavy rims and grooved necks and also with stamped patterns, the spouted vases, carinated vessels, *lotas* and the lid-cum-bowls are common types.

(b) **Period II**

(i) Russet Coated Painted Ware (Pl. XLV A) :—

This well-defined ware which provides a datum[1] in time ranging from 1st century A.D. to the beginning of 3rd century A.D. is represented here in the lowest level of Period II, though in a meagre quantity. Like Maski[2], here also it is available both in Black and red and Red slipped Ware. A single specimen of Black slipped ware is evidenced with the painting in white which is a rare variety but not unknown earlier.[3]

The paintings are essentially rectilinear in pattern. The designs are composed of vertical or oblique lines to form into zig-zag, criss-cross or latticed patterns. Sometimes verticals are composed in groups and also alternated with dots. In a single instance vertical rows of small dots are alternated with big dots. The paintings are made externally on the sides downwards around from the rim. Only in a solitary instance (Fig. 33, 1), a double banded decoration in black is noticed internally below the rim and in another a line of indigo tint is seen overlapping the painting around the rim externally (Fig. 33, 5).

The pottery is invariably made on fast wheel and the types comprised mainly of dish, and straight sided bowls. However, a couple of sherds of medium sizes red slipped globular vase of coarse fabric is also noticed with paintings around the shoulder (Fig. 33, 9, 10, 11 and 12).

The paintings are made in white or kaolin paste over which a thin coat of russet coloured wash prepared out of red ochre seems to have been given which visibly overlaps the paintings. The coating in some instances is noticed with a network of cracks thereby indicating that the pottery was salt glazed.

[1] *Ancient India*, No. 4, p. 308.
[2] *Ancient India*, No. 13, p. 73.
[3] *Ancient India*, No, 13, p. 73.

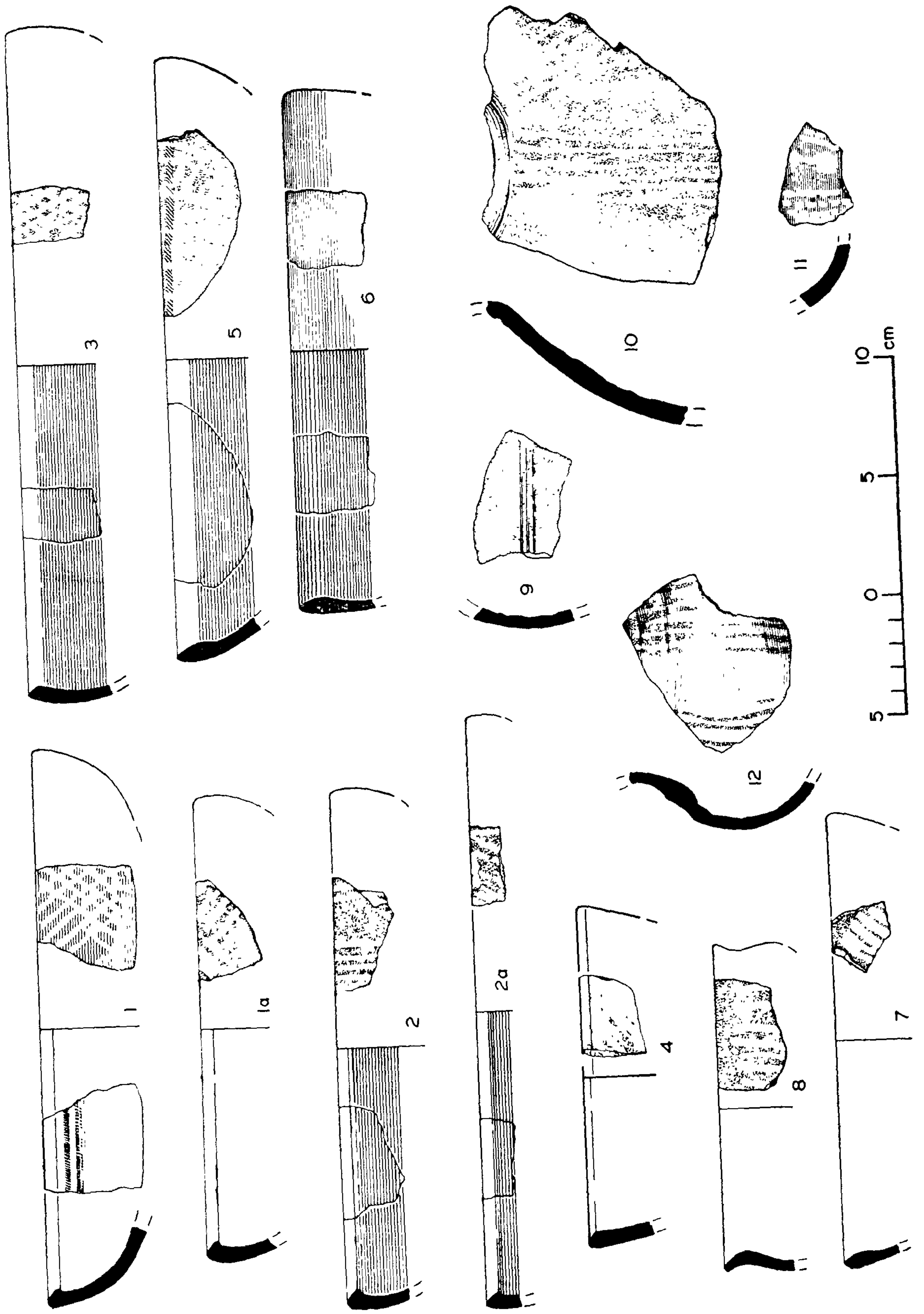

FIG. 33

Among the two common types of dishes and bowls noticed in this ware, the former type, particularly 'beaked rim' variety, has close affinities with the types in Rouletted Ware. Though we have not come across any specimens having both the rouletted pattern and painted designs, it appears to be more probable that some of the dishes in the Rouletted Ware too might have contained the paintings over them, thereby suggesting the indigenous nature of Ware. The later type, save for the paintings, closely resembles the similar types of megalithic culture.

Comparatively the meagre representation of this ware at Satanikota (17%) in the total assemblage of more than 130 thousand sherds suggests the probability of its deluxe nature.

The following series illustrate the range of patterns and forms together with the types available at Satanikota (Fig. 33).

Type 1. Dish of red slipped ware with a beaked rim, a basal groove, sides narrowing to a convex base. It is painted externally on the sides in white lattice pattern and internally in a band of double lines in black below the rim. It is of medium fabric and treated with brownish-red slip, salt glazed, and fired at medium temperature with the resultant darkened unoxidized portion of the core and black patchy external surface. Parallels are available at Chandravalli and Maski.[1] From early level of Period II.

Type 2. Dish of a black-and-red ware with an almost vertical, internally thickened and obliquely cut rim. It is painted on the outside with vertical lines in groups[2] salt glazed. Of medium fabric, treated with deep brownish-red slip, which has burnt black and red in characteristic manner, i.e. externally red and internally black with red, limited to rim portion only. Variant 2a, differs in having the pattern of painting with oblique lines. Of medium fabric it is treated with black inside and yellowish brown slip inside and salt glazed. Exhibits darkened unoxidized portion of the core towards inner surface. From mid-level of Period II.

Type 3. Deep bowl of black-and-red ware with almost vertical internally thickened obliquely cut rim and painted with lattice pattern in white.[3] Of medium fabric, treated with yellowish red slip externally and black internally. From mid level of Period II.

Type 4. Cup of red ware with vertical sides and oblique cut rim. It is externally painted at the rim with oblique lines in white. Of medium fabric, is treated with dull red slip. Found from a pit.

Type 5. Bowl of black-and-red ware with internally thickened rim and tapering sides. It is painted with white in slanting lines and criss-cross pattern, side by side.

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[1] *Ancient India,* No. 4, p. 279, fig. 45, A6; *Ibid.,* No. 13, p. 74, fig. 25, 1.

[2] In red ware same type is available from Chandravalli, cf. *Ancient India* No. 4, p. 279, fig. 45, A8.

[3] On a straight sided bowl the pattern is available from Maski, cf. *Ancient India,* No. 13, p. 74, fig. 25, 7.

On the exterior around the rim a thin band in indigo is drawn over the white painting. Of medium fabric, it is treated on both sides with a slip which has a burnt black inside excluding the rim, and bright red outside including the rim. From top levels of Period II.

Type 6. Straight sided bowl of black-and-red ware with a vertical internally thickened rim. It is painted in slanting lines.[1] Of medium fabric, treated with a slip which has black inside and black and red on the outside, and salt glazed. From mid-level of Period II. Analogies of the type without painting are available at Brahmagiri and Maski.[2]

Type 7. Bowl of red slipped ware with vertical featureless rim. It is painted externally in oblique lines in kaolin. Of medium fabric, treated with red slip externally. Ill-fired and exhibits unoxidized smoky core. From mid-level of Period II.

Type 8. Bowl of red ware with everted featureless rim.[3] It is painted in vertical lines. Of medium fabric, treated with red slip on both the sides and slat glazed. From mid-level of Period II.

Type 9. Globular vase of red and yellowish-brown wares with vertical lines in groups alternating with thick dots.[4] Of coarse fabric, treated externally with brownish red slip, ill-fired and showing smoky unoxidized core. From mid-level of Period II.

Type 10. Globular vase of red ware and painted with vertical lines in rows interspersed with thick dots. Of coarse fabric, treated with red slip externally, ill-fired and exhibits black patches on the surface. From mid-level of Period II.

Type 11. A solitary specimen of black slipped ware. It is the base portion of a globular vase, painted in white in rows of dots and interspersed with big dots. Made of comparatively fine fabric, treated with black slip on both sides and well fired. Similar specimen is reported from Kopbal.[5] From mid-level of Period II.

Type 12. Fragment of a vase of dull red ware, treated externally with white wash and painted in rows of lines in groups with red ochre. Of medium fabric, it is indifferently fired and exhibiting unoxidized smoky core in mid-section. From a pit, Period. III.

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[1] The design is comparable from Utnur, cf. Allchin, F. R., *Utnur Excavations* (The Govt. of Andhra Pradesh, 1961). fig. 9, 20.

[2] *Ancient India,* No. 4, fig. 9, C8, p. 210, No. 13, fig. 14B (i) p. 52.

[3] *Ancient India,* No. 13, p. 74, fig. 25, 4.

[4] Comparable type betraying the almost identical design also found at Chandravalli, cf., *Ancient India,* No. 4, p. 279, fig. 45, type A5.

[5] *Ancient India,* No. 13, p. 73.

(ii) Rouletted Ware (Pl. XLV B) :—

This well defined ceramic industry occurs in Period II only. The characteristic pottery type in this ware is the dish in different sizes sometimes ranging to more than 28 cm in diameter. Some of them resemble the Arikamedu type with beaked rim.[1] This ware has remarkably polished smooth surface which was probably achieved by burnishing and application of fine bright slip, and in some cases has on the lower bottom a series of concentric designs in rouletting pattern.[2]

The ware occurs in black-and-red and also in red ware. But the frequency of black-and-red is more when compared with the other wares. A couple of sherds with remarkable black polish on both the side faces are the only stray examples of black coloured ware. The representation of this Rouletted Ware in the total assemblage of pottery from this period is very meagre, with about 3% and numbering about 300 sherds in all.

It is entirely wheel-made and slipped. Some of the pieces are of fine fabric with thin section made of well levigated clay and exhibit superior workmanship. A few of the sherds of medium fabric indicate their local character in treatment and also in rouletting patterns.

The smooth surface seems to have been achieved by burnishing the surface with flat pebbly material by holding against the surface while turning the dish over the wheel in leather hard state as seen from the horizontal facets formed around the external surface.[3] The application of the slip too seems to indicate similar process by which lac is applied to turned woodwork of the present day.

The colour of the slip differs from deep vermilion red to dull red and also brownish red or chocolate in shade. The slip though bright, is brittle in nature often coming out in flakes from the surface and also eroding away. It is generally opined that the variation of colour in different shades is due to the variation in temperature under which the pots were fired.[4]

However, in the case of red ware conspicuously the slip is seen applied externally on the sides only extending a little inside upto the rim portion. The internal portion and the external bottom portion are left in dull red without any slip (fig. 22, 4 b). Unlike the megalithic Black-and-red ware wherein the combination of black externally on the sides, red at the bottom and internally all black, is seen, this ware with the following combination is noticed in four varieties :

(1) Red Ware with external bottom in black ;
(2) Red Ware with bottom in black both externally and internally ;
(3) Red externally and black internally ;

[1] *Ancient India,* No. 2, p. 47, fig. 12.

[2] Though the complete dishes with rim and the bottom with rouletted disigns are not available, the available evidence of rims and the designed pieces of bottom amply proves that both belong to one and the same fabric and type of this rouletted ware.

[3] Rawson, P.S., 'The Surface Treatment of Early Indian Pottery', *Man.* LIII—March, 1953, p. 44 ff.

[4] *Ancient India,* No. 2, p. 46.

(4) Black internally but externally red, limited only to the sides, and the bottom is again treated with black.

It is significant to note that (1) largely the bottom is treated in black both externally In a few cases where black bottom is seen only on one side either externally or internally.

(2) Externally the sides are always treated in red, but interally either in red or in black.

Unlike in the case of megalithic Black-and-red ware the demarcation of black and red on the surface is always in a perfect manner, as if a line of separation is drawn between them. The internal black ends in most of the cases exactly below the rim or at the middle of the rim, but never extends out in any case.

A sort of carbonaceous material which turns black after firing seems to have been applied to achieve black at required places while the rest of the portion was treated with red slip and also fired under reducing conditions separately either in individual chambers or in some sort of saggars. Like the thick coat of red slip, the internal black slip also is seen in some cases coming out in flakes and in some cases the thin single coating of slip which was given internally on the sides is clearly distinguished against the red background and also from the dark bottom with multicoatings of slip which in some cases found eroding off from the surface. (Fig. 22, 1-5, 5a and 5b).

In the case of dishes which are the core of that portion also turns unoxidized smoky. In a few cases the internal slip is seen universally applied with patchy effect.

It appears that the technique of inverted firing was not the only cause for the achieved black and red effect, but the surface treatment with different pigments, and also the technique of firing them individually in different methods might have also helped in preparing this sophisticated pottery.

The lower bottom of these dishes depict a series of designs in rouletting pattern. These are essentially incised and include concentric bands of dots, dashes obliquely arranged semi-circular dots and small squares either independently one after another or in groups one above the other. These designs in general do not exhibit fine workmanship and the pottery bearing this variety of designs may indicate the attempt of the local workman.

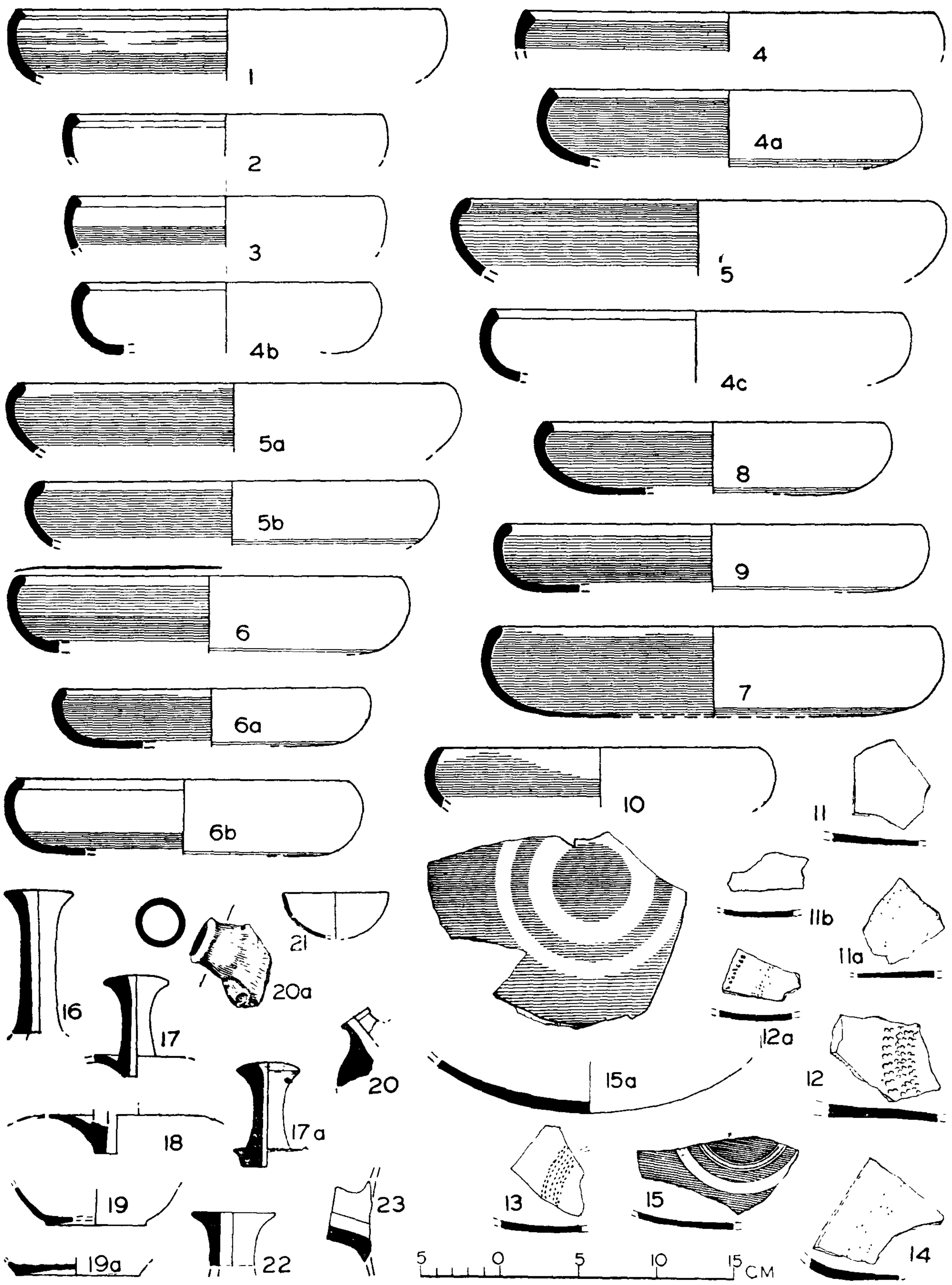
Some of the dishes bore concentric bands in place of rouletting. In a couple of stray cases these bands are seen imitated on dishes and ordinary black-and-red ware of medium fabric. They may be regarded as derivative.[1] (Fig. 22, 15, 15a).

The similarity of types with Arikamedu, Brahmagiri, Chandravalli and Salihundam in the South, the bright fine-polished treatment of surface and the patterns of rouletting would naturally associate this industry with that found at these sites and this indicates its origin outside the place.

The following selected examples are illustrated :

Rouletted Ware (Fig. 34) :

[1] Similar sherds are also noticed at Chandravalli, cf. *Ancient India,* No. 4, p. 277, Pl. CXXIII; also at Virapuram, District Kurnool, excavated by the Birla Institute.


1
2
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5a
5b
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16
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5 0 5 10 15 CM

FIG. 34

Type 1. Dish of black-and-red ware with incurved and internally projected beaked rim with uniform section. Of fine levigated clay, it is well burnished and slipped on exterior in vermilion red and internally in black. The slip, being brittle peels off considerably in small flakes. From the mid-level of Period II.

Type 2. Dish of red ware with bluntly beaked and slightly incurved rim and treated with brownish red slip internally. Of fine fabric, it is well baked with oxidized core. Rough analogies are available with—1e of Arikamedu[1] and 3c of Salihundam[2] rouletted wares.

Type 3. Dish of Black-and-red ware with incurved and internally thickened and rounded rim[3] with convex and brightly polished sides. Of fine fabric, it is comparatively thin in section and brightly slipped on both sides, which is externally brownish red and black in the interior. From upper level of Period II.

Type 4. Dish of black-and-red ware with slightly incurved rim which is internally thickened and obliquely cut with a prominent ridge. Of medium fabric, it is treated with a slip which is brown externally and black internally. Fired in reducing conditions with unoxidized smoky core towards inner black surface. From unstratified deposit. Variant 4a, differs from the main type in having internally thickened and prominently incurved rim. Of medium fabric, it is burnished and treated with a slip which is externally red on the sides, and black at the bottom and in the interior. Unoxidized smoky core at the bottom, and on the sides towards the inner surface. From upper level of Period II. Multiple horizontal facets on the external sides indicate either the method of burnishing or application of slip. Variant 4b, differs from the main type in having a prominently incurved rim and bulging body. Of medium fabric it is treated with bright red slip on the exterior sides. Internally the surface lacks the shining probably due to simple wash. From an unstratified deposit. Variant 4c, differs from type in having bluntly thickened and internally chamfered rim. Of fine fabric, it is treated with a slip on both the sides which is red externally and blackish brown internally, and well fired. Analogies occur from Salihundam.[4] From mid-level of Period II.

Type 5. Dish with incurved and internally clubbed rim[5] of fine fabric burnished and treated with slip which is brown externally and blackish brown internally. The slip, which is brittle, is flaking off on both sides, in particular externally in horizontal bands over the facets which were caused in burnishing. Of fine fabric and well fired. From Upper-level of Period II. Variant

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[1] *Ancient India,* No. 2, p. 47, Fig. 12-1 c.

[2] Subrahmanyam, R., *op. cil,* (1964). Fig. 137, 30.

[3] *Ancient India,* No. 2, p. 47, Fig. 12.

[4] Subrahmanyam, R., *op. cit.,* (1964) Fig. 13, 3.

[5] *Ancient India,* No. 2, p. 53, Fig. 14, 4 a.

5a, differs from the main type in having incurved round collared rim. It is of fine fabric and polished with a slip which is bright red externally and black internally. The thick coating is peeling off externally in flakes. Internally the black coating is denser in the lower portion which achieved shining black, and the portion at the rim is left uncoated. From mid-level of Period II. Variant 5b, differs from type in having a thin oval collared rim with pronounced bulging sides. Of fine fabric with relatively thin section, it is treated with a bright red slip on the exterior sides and with black on the outer base as well as in the lower interior. From upper-level of Period II.

Type 6. Dish with incurved sides and featureless rim. Of fine fabric and highly burnished and it is treated with a slip which is bright red on the exterior with black bottom and the interior excepting the rim portion. The blackness on the sides is relatively lesser than that given at the bottom. A clear demarcation line is visible between the pigments at the bottom and sides. On the sides, since the pigment is coated as a thin layer, the red background is visible here and there in patches, while in the base jet-blackness is achieved. The section at the bottom where the surface is treated with black on both the sides depicts unoxidized smoky core while that at the sides where it is treated internally black, the section deposited a well-burnt brick red coloured core. From mid-level of Period II. Variant 6a, differs from type in having low girth and flat base. It is of fine fabric and treated as above. From upper-level of Period II. Variant 6b, differs from type in having a thinned rim and flat base. Of fine fabric it is treated externally with a slip which is bright red on the sides and black at the bottom. Internally the slip is given only at the bottom which has turned black while the unslipped sides remained red in colour. The core in the base portion is smoky black while in the rest of the portion it is fully baked in dull red. From top level of Period II.

Type 7. Dish with raised sides and a slightly inturned internally thickened rim and flat thin base. Of fine fabric, burnished and treated with a slip on both the sides. It achieved black inside while externally red on sides and black at the bottom. From an unstratified deposit.

Type 8. Shallow dish with inturned internally thickened rim and low girth and flat base. Of fine fabric it is treated internally black and externally red on sides and black at base. Unoxidized smoky core is seen at the base where it is black on both the faces. From the early level of Period II.

Type 9. Dish with almost vertical raised sides and incurved thickened rim and flat base. Of medium fabric, burnished and treated with a slip on both the sides. It achieved the black internally and red externally on sides and black at base. Due to indifferent firing the external sides too achieved mostly a patchy black surface. From top level of Period II.

Type 10. Dish with incurved sides and inturned sharpened rim. Of fine fabric, burnished and treated with a slip on both the sides. Externally vermilion red shine is achieved while a patchy black surface is seen internally due to indifferent firing. From early level of Period II.

Decorated Sherds in Rouletted Pattern :

Type 11. Base fragment of a dish of black Ware[1] decorated with faint dashes in concentric circles. Of fine fabric treated with a slip which is black on both the sides. From mid-level of Period II.

Type 11a. Base fragment of a dish of black ware in thin section with two bands of fine dashes of six rows in each. Of fine fabric and slipped on both sides. From unstratified deposit.

Type 11b. Base fragment of a dish of black ware with a band of dots in three pairs of rows. Of fine fabric and treated black on both sides. From early level of Period II.

Type 12. Base fragment of a dish of black ware it is decorated with obliquely arranged semicircular dots in two groups, major and minor, in two bands, one above the other. Of fine fabric and slipped on both the sides. From early level of Period II.

Type 12a. Base fragment of a dish with two bands of dotted decorations. Triangular dots in big size are marked in the second band. Of medium fabric and treated with black on both sides. From mid-level of Period II.

Type 13. Base portion of a dish with a band of small dashes in six rows. The design is quite insignificant and indicates poor imitation. Of medium fabric and slipped on both sides in black. From an unstratified deposit.

Type 14. Base fragment of a red ware dish with a band of dots in seven rows insignificantly marked. External base is treated with red while the inner base is seen in smoky black at the central part achieved due to indifferent firing. The design is faintly depicted. Of medium fabric and treated with a slip which is externally red and internally brownish black. From mid-level of Period II.

Type 15. Base portion of a vase or bowl of black and red ware and not coming under the group of rouletted ware. It is treated with the smooth bands in pale white with the edges on either side more prominent. The outer band is not much clear. Of medium fabric, thin section and treated with a slip which is black inside and red externally at the bottom. From mid-level of Period II. It is an imitated ware in local fabric.

[1] Since the designs are depicted on the base which is treated in most of the cases black on both sides the core too obviously appears black. It is therefore uncertain whether any of the sherds belong to all black ware, which is otherwise not traced in the excavation in this ware.

Type 15a. Base portion of a vase, slipped and treated black, inside, and red outside with two concentric smoothed bands on the inner surface. It is of medium fabric. From mid-level of Period II.

(iii) Red Polished and Kaolin Wares ;

(a) Red Polished Ware :

One of the important deluxe wares of Period II is the Red Polished Ware. It occurs in very meagre quantity of 0·2% of the total assemblage and in a very few distinct forms (only two) of which the sprinkler type is the prominent one. Such pottery has been extensively found in Western India associated with the Kshatrapas and the Satavahanas and and thus datable to the early centuries of the Christian era. The meagre representation of of this ware at Satanikota indicates its sophisticated and alien nature to the region. The ware is of extremely fine levigated clay and is uniformly burnt in brick-red colour and has a metallic ring. The outer surface, which seems to have been treated with a fine ferrous slip, gets a very fine smooth polish from orange pink to dull red.

The nucleus of this ceramic industry seems to be Saurashtra wherein the largest number of sites have come to light with a number of types coming from the sites at Amreli and Somnath. The distinct type available at Satanikota is the narrow concave sides necked sprinkler with a small opening. The neck which is separately made is generally luted to the globular body and as such these necks are often found separated or broken at joint or found together with small fragments of the thick walled body. These sprinklers are also provided with a short shouldered spout luted to the shoulder. The globular or ovoidal body has a round base.

These are not wheel-turned as would appear from the irregular thickness of the section which ranges from 2 mm to 1 cm often with finger impression in the interior while pressing the clay against a mould. The well finished luting of the neck to the body in the interior indicates that the vessel was closed from the bottom after moulding by hand.

The external surface is highly smoothened and treated with bright slip. The colour of the slip varies from salmon red to greyish pink or dull red.

There is no indication of any attached handle. Besides the sprinkler, the other type available is a miniature bowl or cup. A small fragment of a decorated object with a moulded decoration of lotus petals and an incised line-drawing of a lotus flower and foliage is a quite attractive piece in this ware, which is described and illustrated under Decorated Ware.

Stray examples of a couple of sherds, one in black ware and the other in grey ware of fine levigated clay in thin section, well made and treated with yellowish brown slip and dull red slip, respectively, are the imitations of the local potters.

(b) Kaolin Ware :

The representation of Kaolin Ware which is very meagre with 0·004% (almost a dozen sherds) of the total assemblage is no doubt a stray evidence in the region. The only type available is the sprinkler.

The external face in this ware is invariably burnished having a very smooth surface. The colour of this ware ranges from egg-shell white to dull yellow or buff colour and also to pinkish white. It is of fine levigated compact clay and well burnt with metallic ring.

The available small number of sherds in this ware indicate from their uneven section that they too are not wheel-turned but, like the red polished ware, are hand-made. The structure of the section indicates that a fine semi-solid paste or Kaolin was used in the moulds. The available fragments do not indicate any other type except sprinklers.

A few selected and illustrated types of both Red Polished Ware and Kaolin Ware Ware are described below : (Fig. 34).

Type 16. Narrow neck of sprinkler with a flared flat-topped rim, and a central perforation. Of fine levigated clay and uniformly burnt in brick red colour. The outer surface is treated with fine ferrous slip and gets a very smooth polish in bright red. Minute flutings along the length of the neck which indicate their polishing are visible under magnifier. Evidently this polishing was done over the slip for a fine finish. From the top level of Period II.

Type 17. A short narrow neck of sprinkler with concave sides and flared rim with convex top. It is provided with a relatively smaller perforation. It is an independent unit separately made and luted to the pot, with the result that a cleavage is formed at the lower end where it is luted to the body. Of fine levigated clay and uniformly burnt in brick red colour. The outer surface is treated with fine slip in dark red colour and highly polished. From mid-level of Period II. Variant 17a, differs from the main type in having a thin neck. From an unstratified deposit.

Type 18. The upper part of the body of sprinkler where the neck is luted. The surface makes a depression from its globular shape and forms a cleavage around the luted neck. Well finishing is seen inside by pressing the clay close to the luted neck and indicating that the pot was closed from the lower part of the body. From the mid-level of Period II.

Type 19. The circular base portion of a vase, evidently a sprinkler, prominently moulded round base with central depression. Slipped externally in pale red and highly polished. Variant 19a differing from the main type in size and also made less prominent but with flat base. It is made of fine levigated clay. From unstratified deposit.

Type 20. A prominently shouldered spout with beaded rim and short neck, evidently luted to the body of a sprinkler. These spouts are seen luted to the body as a separate unit like the neck.

Type 20a. A spout of red ware with wide opening and short stout neck. It is attached to the body of the vessel by pressing the side clay with the body and providing an additional lump of clay in the form of an animal motif below the spout at the

joint. Of coarse fabric with gritty unoxidized core and devoid of any slip. From mid-level of Period II.

Type 21. A miniature bowl of Red Polished Ware with featureless rim and round base. Of fine levigated clay, well baked, and polished in dull red colour. From mid-level of Period II.

Type 22. Head of a sprinkler of Kaolin ware with flaring and flat-topped rim with central perforation. Of well levigated compact clay with smooth white surface. From mid-level of Period II.

Type 23. A short cylindrical obliquely attached spout of Kaolin ware with bluntly cut mouth. It is attached to the body of the sprinkler. Of fine levigated compact clay and smoothly finished. From mid-level of Period II.

(iv) Black-and-Red Ware (Pl. XLVI A) :—

The Black-and-Red Ware of Period II at Satanikota is the result of inverted firing technique employed in this industry. This technique is often discussed about[1] and needs no repetition. The ware is treated black fully from inside and externally extending only on the sides, leaving the bottom portion red. In total, this ware is prolific in this period with 19% representation of the total assemblage of pottery in this period. This ware in this period distinctly falls into two groups. They can conveniently be labelled as (1) Megalithic Black-and-red ware and (2) Later black-and-red ware according to their position in the excavations. Though both the groups occur in one and the same period they disclose certain characteristic differences.

The ware in the first category, in general, is fine and possesses a bright shining surface which is due to burnishing. It is of well levigated clay with tempering materials like sand, quartz and husk being sparingly used, and hard-baked. The section ranges from medium to thick. The wheel striation are distinct by their appearance indicating the nature of its wheel-turn. The ware is invariably coated with a fine slip which gives shining black in interior, and externally on the sides and red at the bottom ranging from bright red to dull brownish red. In a few cases the pots are seen burnished and slipped on both the sides. Occasionally salt glazing is also noticed. But in some cases they seem to have been only coated with an ochreous pigment internally throughout and externally only at the sides leaving the bottom portion uncoated, probably limiting its application only to that part where the dark black surface was desired after firing under reduced conditions.

A few types in this group of black-and-red ware do allow a comparison with similar pottery in types and fabric from the near by megalithic sites at Uppalapadu which were excavated recently on the other (left) bank of the River Tungabhadra. The general types occurring in this ware are the bowls, dishes and deep bowls, of which some specimens indicate their close resemblance with those of megalithic pottery from Brahmagiri.

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[1] *Ancient India,* No. 13, p. 50 and 76; *Ancient India,* No. 20-21, P. 68, Subrahmanyam, R., *Op. cit.,* (1964), p. 36, Dikshit, M. G., *Excavation at Kaundinyapura,* (Bombay, p. 33).

Strati-graphically this ware begins from the earliest levels of the period and continues till the end. However, in the lower levels the finer variety with comparatively thin section is more prolific. In the upper levels the quality of the ware degenerates and lacks the fine finish and shine with medium fabric and thic section.

The pottery is usually plain and utilitarian in character. No decorations are seen. However, a few sherds of dish and bowl types are seen painted in white with kaolin and are dealt with under the Russet-Coated Painted Ware. No graffiti marks are noticed.

The second group, in contrast with the earlier one, is dull in appearance and devoid of any sort of surface treatment.

But for the black-and-red effect over the ware which was due to the technique of inverted firing, this is comparable with ordinary dull red ware of medium fabric without any sort of surface treatment. No effect on the part of the pottery to make it qualitative is seen. Even it is not well baked as a result of which it is very fragile and susceptible to easy breaking in contrast with the earlier variety which was hard-baked and not easily breakable. Only conical bowls with string-cut flat base and cups with round bottom are the two types which are very common in this ware. Significantly no type of megalithic Black-and-red ware of the first group occur in this later ware. It is in a way common ware in the sense that it was more handy for common use of the people of all classes at large.

Interestingly, this ware does not appear in the lowest levels where the megalithic Black-and-red ware of the first variety of the first group occurs. It starts from the mid-levels along with the crude variety of the slipped Black-and-red ware and runs in prolific quantities in the upper levels side by side with the latter variety of slipped ware and continues to the end of this period and indicates that the degeneration of this industry had set in.

A few selected types are illustrated (Fig. 35) :—

Type 1. Bowl of black-and-red ware with thickned rim, rounded sides and externally grooved with round base. Of fine fabric and thin section, it is treated with a bright slip which has black-and-red in characteristic manner showing black internally and black and red outside with black confined to the upper portion.[1] Seeminly salt glazed. The type is very much similar to that of Brahmagiri[2] and Maski[3] megalithic Black-and-red ware. The fabric, texture and slip are also akin tothe megalithic Black-and-red. From the early level of of Period II.

Type 2. Bowl of dull black-and-red ware with thickened incurved rim, convex sides with a grooved body and seemingly rounded base. Of medium fabric and devoid of any surface treatment. From mid-level. Belong to group II of later black-and-

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[1] Unless otherwise stated the fabric of the ware mentioned under this group is of similar technique.

[2] *Ancient India*, No. 4, p. 210, Fig. 9, C. 8b.

[3] *Ancient India*, No. 13, p. 52, Fig. 14., B(i) 1.

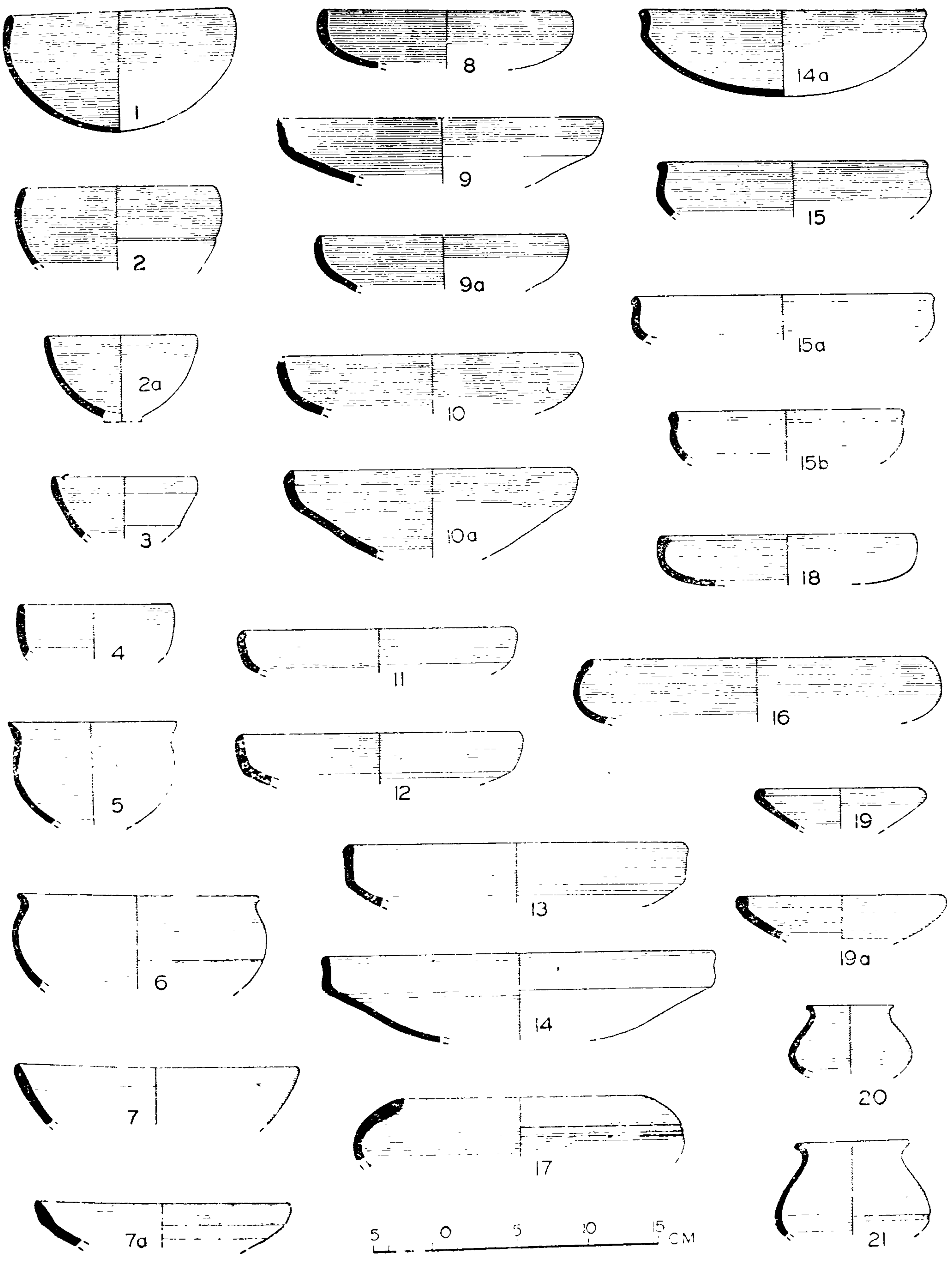
1
2
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FIG. 35

red ware. Variant 2a, of the same ware and fabric with tapering sides probably for a flat base.[1]

Type 3. Cut with sharpened rim and tapering sides, and external corrugations. Of medium fabric and devoid of any surface treatment. From an unstratified deposit. Belongs to group II.

Type 4. Cup with featureless rim. Of medium fabric, in thick section and devoid of surface treatment. From upper levels of group II.

Type 5. Bowl with sharply out-turned and sharpened rim, round sides and possibly with flat base. It is grooved at the neck. The type is roughly comparable with the megalithic types at Chandravalli.[2] It is of fine fabric, thin section and treated with an ochreous slip which turned black in its characteristic manner of firing, both, internally and externally at the rim, and leaving its traces in dull red externally over the body. The lower portion is devoid of slip. Probably, the application of slip was sparingly restricted to that portion where blackness was desired. From mid-level of Period II.

Type 6. Deep bowl with bulging body and slightly out-turned rim and grooved near the waist. Probably it has a round base. Of fine fabric and treated with a slip slip on both the sides. From mid-level of Period II.

Type 7. Bowl of dull red ware with featureless rim and tapering sides probably for flat base. Of medium fabric and thick section, it is without any sort of surface treatment and having an unoxidized smoky core towards external surface which has turned unusually black leaving the internal face as dull red. From mid-level of Period II, of group II. Variant 7a, having external corrugations. Due to defective firing, required black could not be achieved internally except at the rim. From Period II.

Type 8. Dish with a slightly thickened vertical rim with convex base. Of fine fabric, well-burnished and slipped internally in full and externally restricted only to the sides. From upper level of Period II.

Type 9. Dish with sharpened rim and vertical sides with weak carinated profile closing probably to a saggar base and with striations inside. Burnished and slipped on both the sides. Of medium fabric, from mid-level of Period II.[3] Variant 9a, differs in having a slightly inturned and internally sharpened rim. Of fine fabric, well burnished and slipped. From mid-level of Period II.

Type 10. Dish with a vertical featureless rim slightly incurved with convex profile. Of medium fabric and internally slipped. From mid-level of Period II. Variant

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[1] Dikshit, M. G., *Op. cit.*, (Bombay, 1968), p. 55, Fig. 19, 118.

[2] *Ancient India,* No. 4, p. 275, Fig. 43, Subbrao, B; *Excavations at Amreli,* (Baroda, 1966), Fig. 19, 5 (Late level).

[3] *Ancient India,* No. 4, p. 240, Fig. 28, T 148 and Dikshit, M. G., *Op. cit.,* (Bombay, fig. 18, 101 a).

10a, differs in having weakly carinated waist and probably a saggar base. Of medium fabric, it is treated internally with a slip. From mid-level of Period II.

Type 11. Dish with slightly incurved and featureless rim with vertical sides and weakly carinated profile. Of medium fabric and internally slipped. From upper level of Period II.

Type 12. Dish with featurelss rim, vertical sides and weakly carinated profile. Of medium fabric, burnished and slipped on both the sides. From upper level of Period II.

Type 13. Dish with thickened rim, vertical sides and carinated profile. Of medium fabric and internally slipped. From mid-level of Period II.

Type 14. Dish with slightly out-turned featureless rim and saggar base with prominent striations internally. Of medium fabric and treated with a slip. From lower level of Period II. Variant 14a, dish with out-turned internally thickened rim having a little constriction below the rim, and with round base.[1] Of medium fabric and treated with a slip internally and on the exterior sides. From mid-level of Period II.

Type 15. Dish with featureless rim, concave sides and weakly carinated profile. Of medium fabric and treated with a slip. From upper level of Period II. Variant 15a, differs in having a prominent construction below the rim. Of medium fabric and treated with a slip. From upper level of Period II. Variant 15b, differs in having a prominently rounded rim and low girth and weakly carinated profile. Of medium fabric and treated with a slip. From upper level of Period II.

Type 16. Dish with incurved internally thickened rim and a convex profile. Of fine fabric, burnished and slipped on both the sides. From unstratified deposits.[2]

Type 17. Bowl with an incurved sharpened rim with prominent bulbous profile with multi-grooved body. Only one example of this type is noticed. Analogies of this type occur at Chandravalli. Of fine fabric, burnished and treated with a slip on both the sides. From a pit.

Type 18. A dish with bluntly beaked rim with low girth. Of medium fabric, burnished and slipped on both the sides.[3] From upper level of Period II.

Type 19. Shallow dish with a short internally round collared rim and probably with convex base. Of medium fabric and treated with a slip. From unstratified deposit. Variant 19a, differs in having internally thickened rim. Of medium fabric and treated with a slip. From mid-level of Period II.

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[1] *Ancient India,* No. 22, fig, 6, 2; and *Ancient India,* No. 5, p. 85, fig. 8, 8.
[2] *Ancient India,* No. 4, p. 282, fig. 47, A 15
[3] *Ancient India,* No. 13, p. 78, fig. 26, 6 a, Variant rim.

Type 20. Minature vase of dull black-and-red ware with an out-curved featureless rim, short neck, convex profile and weekly carinated waist. Of medium fabric and devoid of any surface treatment. Belongs to later black-and-red group.[1] From upper level of period II.

Type 21. Miniature pot of dull black-and-red ware with an out-carved featureless rim, oblique shoulder and convex grooved waist. Of medium fabric, it is devoid of any surface treatment and belongs to later black-and-red group. From unstratified deposit.

(v) Other wares :

This group largely comprises of red wares and black wares-both slipped and unslipped, chocolate and grey wares. The greater mass of pottery under this group is essentially plain in treatment and utilitarian in character. And the entire range of this ware with a few exceptions of storage jars is turned on fast wheel.

(a) Red Ware :

Among the total assemblage of pottery of this period, red ware dominates with 52·58% of the collection of which 30·72% belongs to slipped variety and the rest, 22·86%, comes under dull red ware of unslipped variety.

The fabric in slipped ware is usually medium in texture with normal *degraissants* like sand and grit but with husk or straw occasionally present and well fired under fully oxidized conditions. It is made non-absorbent by application of a thick coat of red slip either externally or generally on both the sides. The colour of the slip ranges from dark brownish red to dull red and tan brown. No salt glazing is seen. However, in a few cases the pots are unslipped. The types that generally occur in this ware are dishes, cups, bowls, shallow bowls, basins, troughs, and storage jars in a wide range, vessells and vases of different sizes and lid-cum-bowls and spouted vessels, finials and lamps and lugged and handled vassels which are of normal domestic usage. It was a popular ware. The storage jars, in particular, are applied with a thick coat of slip on both the sides, of coarse fabric and thick in section. They do normally contain over the shoulders and body different designs of decorative pattern. A few of these storage vessels seem to have been handmade. Almost all of them are well fired with a few exception having unoxidized smoky core.

Dull red ware (unslipped) is represented only by cups and bowls. But for the surface treatment the fabric is same as that of the slipped ware. In some cases even the wash is hardly present. No decorated varieties are available.

(b) Chocolate Ware :

A good number of sherds with a distinct slip nearer to that of red ware, which ranges from deep brown to yellowish brown, sometimes turning towards red or black are

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[1] *Ancient India,* No 13, p 78, fig 26, 15, variant rim

noticed. This ware is termed as chocolate ware, since it is distinct from both red and black wares. Large sized basins, troughs and a few sprinklers in fragments are noticed. It occurs with a low percentage of 11·53% of the total assemblage. But for the surface treatment its fabric is similar to that of red ware.

(c) Black Wares :

Black wares constitute about 15·85% in the total collection of which slipped variety is only 6·74%. The slipped variety is largely of fine clay free from sand or quartz and fired under reducing conditions in closed kilns. The slip treated on both sides is uniform. But it lacks the elegant finish that is usually associated with the Black Polished Ware. However, in a few cases the treatment of burnishing makes them lustrous.

A couple of fine pot-sherds picked up from the site, with thin section and fine polish, indicate either the attempt of the local craftsman for finer variety or probably a contact from outside. These two are of levigated clay with unusual thickness and lustrous polished surface treatment but, they are too fragmentary to give any idea of their shapes. In one case, the slip is applied only externally having the rough interior untreated.

Though it is generally fine, the fabric ranges from fine to medium and the slip too is seen only externally except in case of dishes, bowls and cups. Wide vases, cups and dishes are the only types noticed in this ware. The cups and dishes that largely occur in this ware do find their prototypes in red slipped ware and in, black-and-red ware also. Dish-stands and finials are also made in the Black ware.

Black ware without any surface treatment is of crude variety and generally associated with the late levels of Period II. Types found in this ware are carinated vessels, lid-cum-bowls, *lotas,* wide mouthed heavy rimmed vessels etc.

(d) Grey Ware :

It is of negligible quantity with 0·04% and nearer to black ware in fabric and types. This appears to be a variety of black ware and the ashy grey colour of it is achieved in the process of its firing. It occurs in association with black ware in the late levels of Period II.

(e) Decorated Sherds :

Decorated sherds are noticed largely in the red slipped ware of storage jars which are normally not of day-to-day use but for decoration, and rarely in black slipped ware and on a few narrow necked vases. The general decorative process is in four varieties, i.e. decoration by applique, incision, and painting.

The design generally comprises of grooves, incised wavy lines, criss-cross lines, oblique slashes, lotus patterns, creaper designs with floral motif and palm-leaf motif.

In the applique method the common motifs are the finger prints in series in one or more bands, the spoked wheel pattern (Fig. 30, 11), a rope or cable, Brahmi 'ma' (Fig. 30, 6), triratna (Fig. 30, 1). In some cases the motifs are incised on the surface of the pots.

Paintings with Kaolin paste and indigo tint are made depicting different motifs with lines, dashes and dots which are described under Russet-Coated Painted Ware.

The following sherds are illustrated and described below :

(Fig. 36, 1-26a) :

Type 1. Miniature shallow bowl of black ware with a featureless rim and grooved waist. Of fine fabric and treated with black slip. From mid-level. Variant 1a, differs from the type in size having a thick section, of fine fabric and treated with black slip. From upper level.

Type 2. Bowl of black ware with a featureless externally grooved rim. Of fine fabric and treated with black slip on both sides. From mid-level. Variant 2a, of red ware differs from the type in having vertical sides. Of fine fabric and treated with thin coat and red slip. From mid-level.

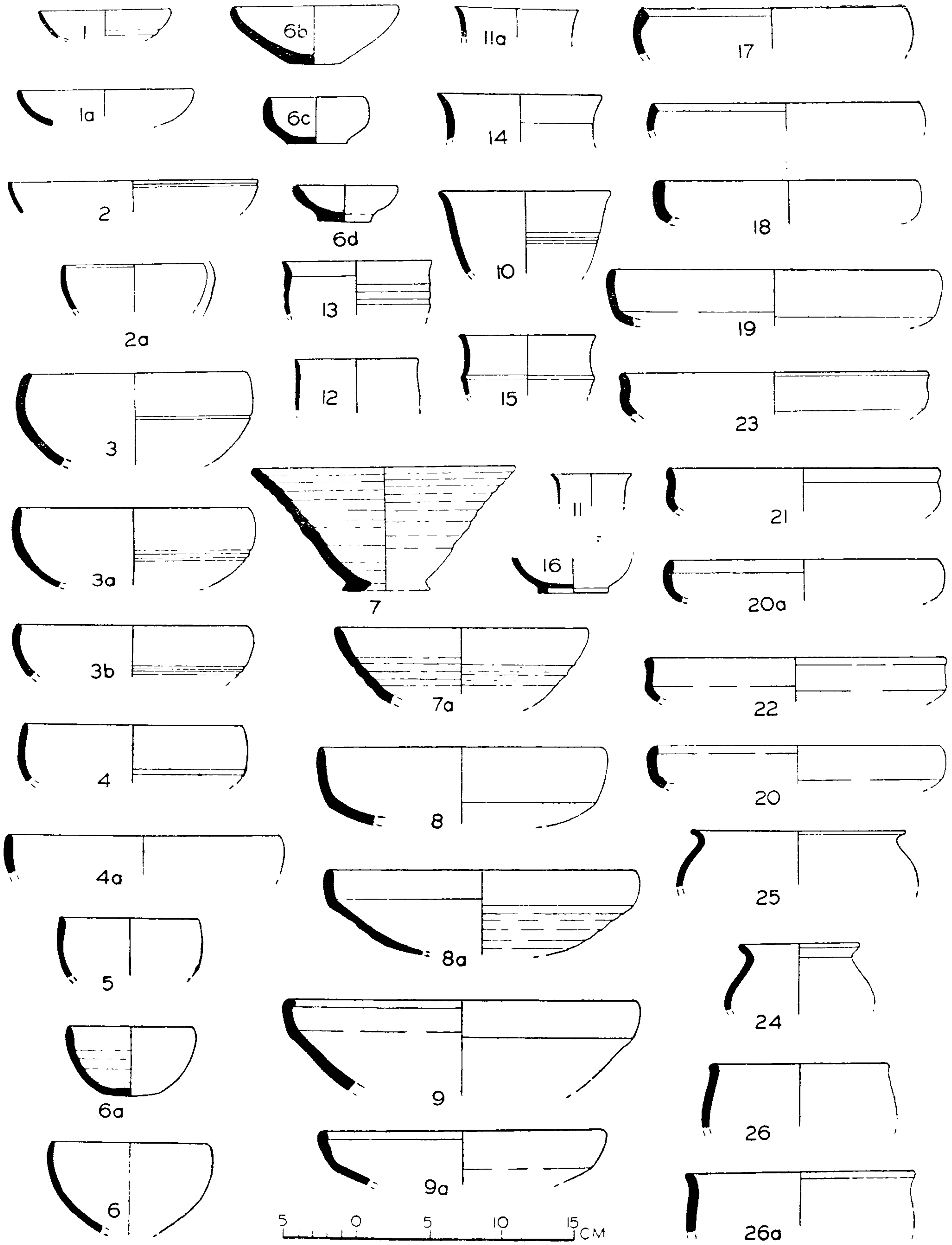
Type 3. Deep bowl of black ware with a little incurved internally thickened rim and externally grooved convex profile with seemingly round bottom. Of medium fabric and treated with black slip. From mid-level. Variant 3a, of red ware differs from the above in having multi-grooved body with incurved and featureless rim. Of medium fabric and treated with a slip which has turned brownish red with a patchy surface. From mid-level. Variant 3b, of black ware and differs in having a little incurved rim and grooved convex profile. Of comparatively fine fabric and treated with black slip both internally and externally. From mid-level.

Type 4. Bowl of black ware with featureless rim, vertical sides and grooved body. Of medium fabric and treated with black slip on both sides. From mid-level. Variant 4a, of red ware with featureless rim. Of medium fabric, devoid of any surface treatment and it is well-fired with oxidized red core. From upper level.

Type 5. Cup of black ware with internally thickened rim, vertical sides and seemingly round base. Of medium fabric and treated with black slip on both sides. From upper level.

Type 6. Cup of dull red with a featureless, incurved rim, dropping to a conical flat base. Of fine fabric and treated with a thin red slip it is well fired with oxidized red core. From upper level. Variant 6a, differs from type in having convex profile closing to a flat base.[1] Of medium fabric, treated with a thin red slip and well fired. From upper level. Variant 6b, a shallow bowl of dull red ware, with a slightly incurved rim, having a wide mouth and closing to a flat string-cut base. Of medium fabric and devoid of any surface treatment. From mid-level. Variant 6c, a miniature bowl of black ware with sharpened rim, straight sides and flat base. Of medium fabric and treated with black slip on both sides. From

[1] *Ancient India,* No 4, p 240, fig 28, T 156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26a
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FIG. 36

mid-level. Variant 6d, a miniature bowl or lamp dish (?) of dull red ware having a splayed out featureless rim and string-cut base. Of medium fabric and devoid of any surface treatment. From mid-level.

Type 7. Deep bowl of dull red ware with featureless thickend rim and string-cut base and having corrugations over the body on both sides.[1] Of medium fabric and devoid of any surface treatment. From mid-level. Variant 7a, bowl of dull red ware and differs from the type in having a little incurved rim. Of medium fabric and without any surface treatment. From upper level.

Type 8. Bowl of red ware with vertical sides and featureless rim having a carinated profile and seemingly convex base. Of medium fabric and treated with fine red slip on both sides. Well fired with oxidized red core. From upper level. Variant 8a, differs from the type in having a profile of low gritty and corrugated saggar base. Of medium fabric, treated with a thin orange-red slip and well baked. From upper level.

Type 9. Bowl of dull red ware with an incurved, internally thickened rim, vertical sides[2] and weakly carinated profile with round base. Of medium fabric and treated with a thin red slip. From mid-level. Variant 9a, of red ware differs from the type in having a thickened rim with vertical sides and weakly carinated profile. Of medium fabric and treated with red slip on both sides. From upper level.

Type 10. Cup of black ware, bell-shaped with straight sides and a slightly out-turned rim and externally grooved body. Of medium fabric and treated with black slip on both sides. From a pit.

Type 11. Miniature cup or bowl of black slipped ware with vertical sides and out-turned sharpened rim. Of fine fabric and thin section, it has a fine polished surface with black slip on both sides. From upper level. Variant 11a, of black ware, having a thick section and comparatively less polished surface. It is of fine fabric. From upper level.

Type 12. Cup or bowl of black ware with straight sides and weakly out-turned sharpened rim. Of fine fabric, treated with black slip and glazed. From mid-level.

Type 13. Cup or bowl of black ware with slightly everted sharpened rim, straight sides and multi-grooved body. Of medium fabric and treated with black slip on both sides. From upper level.

Type 14. Cup or bowl of black ware with an out-turned sharpened rim and convex grooved sides. Of medium fabric and treated with black slip. From upper level.

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[1] Deo , S B & Joshi, J P; *Pauni Excavation*, (Nagpur University, 1972).

[2] Subrahmanyam, R; *Op cit.*, (Hyderabad, 1964), fig. 22, 112, variant rim.

Type 15. Miniature vase of black ware with a sharpened out-turned rim and concave neck and banded waist. Of medium fabric, it is treated with black slip on both sides which is worn out and flakes off from the surface. From early level.

Type 16. Lower part of a globular vase of black ware with a fluted ring-base. Of medium fabric and treated with black slip on both sides. From upper level.

Type 17. Dish of black ware with bluntly beaked rim and convex sides. Of medium fabric and treated with black slip on both sides. From upper level. Variant 17a, of black ware differs from type in having an internally thickened and obliquely cut rim. Of medium fabric and treated with black slip on both sides. From upper level.

Type 18. Dish of red ware with slightly incurved thickened rim, straight sides, weakly carinated waist and probably with flat base.

Type 19. Dish of red ware with straight sides, bluntly inturned internally thickened rim and weakly carinated profile. Of medium fabric and treated with red slip on both sides. From mid-level.

Type 20. Dish of black ware with an incurved featureless rim and weakly carinated profile. Of medium fabric and treated with black slip. From upper level. Variant 20a, differs from the type in having a sharpened, internally under-cut rim. Of medium fabric and treated with black slip on both sides. From unstratified deposit.

Type 21. Dish of black ware with everted featureless rim. Of medium fabric and treated with a slip both externally and internally. From mid-level.

Type 22. Dish of black ware with everted featureless rim and weakly carinated waist and probably with flat base. Of medium fabric and treated with black slip. From upper level.

Type 23. Dish of black ware with everted featureless rim and weakly carinated waist and probably with flat base. Of medium fabric and teated with black slip. From upper level.

Type 24. Miniature vase of black ware with an out-turned featureless rim seemingly with globular body. Of medium fabric and treated with black slip. From upper level.

Type 25. Vase of black ware with out-curved featureless rim and concave neck and oblique shoulder. Of medium fabric and treated with slip. From upper level.

Type 26. Vase of black ware with slightly everted featureless rim and closing sides. Of medium fabric and treated with black slip on both sides. From upper level. Variant 26a, of black ware, differs from type in having straight sides and everted rim. Of medium fabric and treated with black slip on both sides. From mid-level.

(Fig. 37, 27—54) :

Type 27. Vase of black ware with out-turned rim and grooved oblique shoulders. Of medium fabric and treated with black slip on both sides. From the upper level.

Type 28. Vase of black ware with sharply out-turned featureless rim and oblique shoulder. Of medium fabric and treated with black slip. From upper level.

Type 29. Vase of black ware with a slightly out-turned featureless rim, oblique shoulder and weakly carinated profile seemingly closing to a round base. Of medium fabric and treated with black slip. From upper level.

Type 30. Vase of black ware with out-turned thickened rim[1] and oblique shoulder. Of medium fabric and treated with black slip on both sides. From upper level. Variant 30a, differs from the type in having a slightly out-turned and thinned rim. Of medium fabric and treated with black slip. From upper level.

Type 31. Vase of black ware with an out-turned, internally thickened rim vertical shoulder and prominently carinated profile closing to round base. Of medium fabric and treated with black slip. From mid-level.

Type 32. Vase of dull red ware with out-turned, externally thickened and obliquely cut rim, grooved convex shoulder and globular body possibly with round bottom. Of medium fabric it is treated externally with a thin red slip and fired indifferently with unoxidized smoky core towards the inner surface. From upper level.

Type 33. Vase of dull red ware with out-turned externally thickened rim and concave neck, oblique shoulder and weakly carinated grooved waist. Of medium fabric it is treated externally with red slip and well fired. From upper level.

Type 34. Miniature *lota* of *chembu* (Telugu) of red ware with closing sides, out-turned externally beaked rim and oblique grooved shoulder. Of medium fabric it is treated externally with deep red slip which extends inside up to the rim only. From upper level.

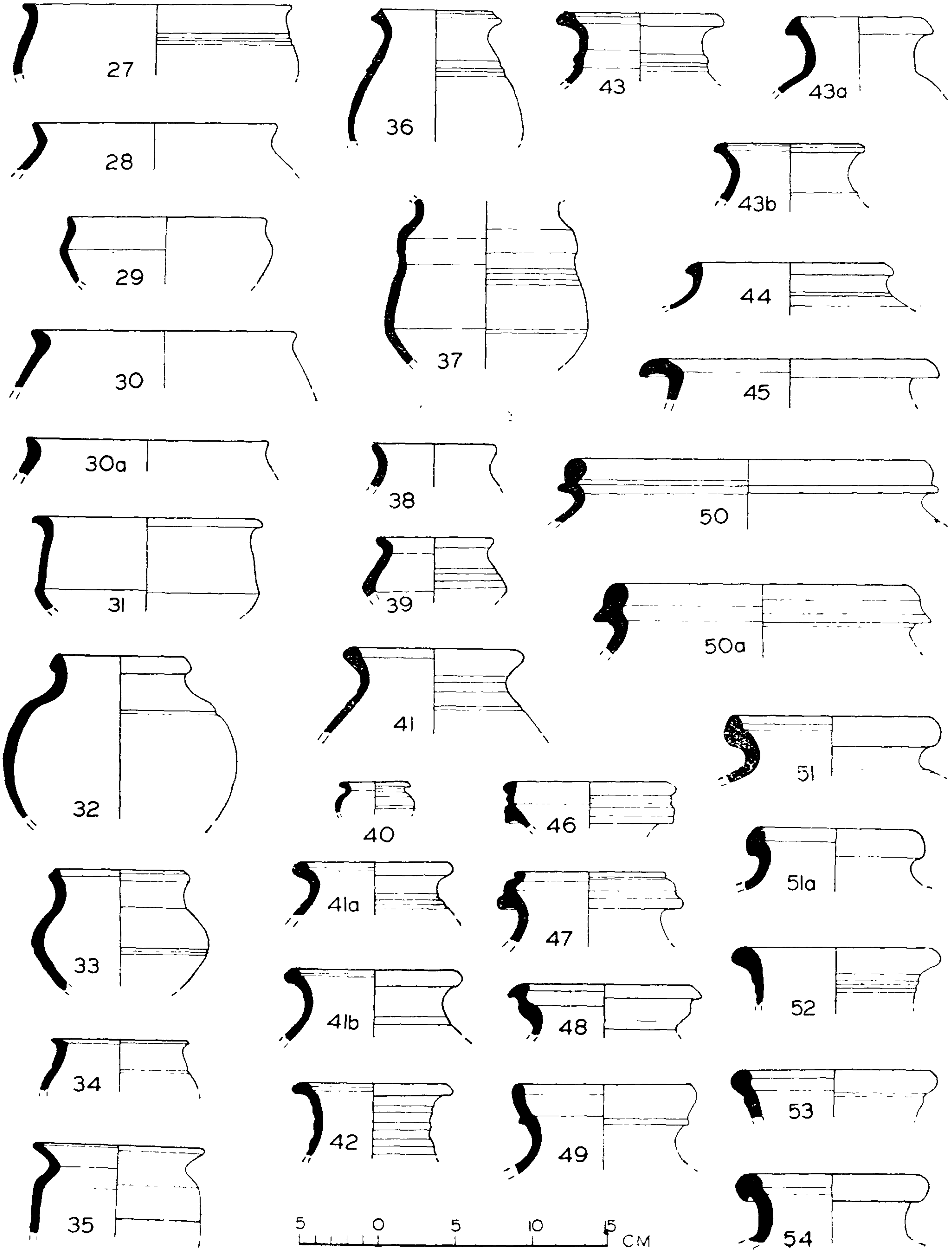
Type 35. Miniature vase of red ware with pronouncedly out-turned internally thickened rim and vertical sides with closing neck.[2] Of medium fabric and treated with bright red slip on both sides. From mid-level.

Type 36. Miniature *lota* or *chembu* (Telugu) of black ware with short out-curved externally cordoned rim and grooved oblique shoulders. Of medium fabric and without any surface treatment. From mid-level.

Type 37. Broken (double) rim of a pot of red ware with a short vertical neck and oblique shoulders forming a ridge with the straight body having a concave bend in the middle and widening down with a carinated waist to a round bottom. The

[1] *Ancient India,* No. 20 & 21, p. 86, fig. 27, 10, variant rim.

[2] Subbarao, B., *Baroda Through The Ages,* (Baroda, 1953). Fig. 16, 36.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50a
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51a
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5 0 5 10 15 CM

FIG. 37

prominent striation internally indicate that it is turned on a fast wheel. Of medium fabric it is treated with bright red slip externally and extending internally upto the neck. Well burnt with oxidized red core. Similar pots are reported from excavation at Pedabankur, a Satavahana site in Andhra Pradesh. From upper level.

Type 38. Vase of black ware with an out-curved featureless rim and concave neck. Of medium fabric and devoid of any slip. From upper level.

Type 39. Miniature vase of red ware with a short out-curved featureless rim, oblique shoulders and possibly carinated profile. Of medium fabric it is treated externally with red slip and well baked. From mid-level.

Type 40. Tiny pot of red ware with an out-curved thickened rim and convex body with a groove. Of medium fabric it is devoid of any surface treatment, well baked. From mid-level.

Type 41. Vase of red ware with narrow neck out-turned externally thickened rim[1] with oblique grooved shoulder. Of medium fabric and treated externally with red slip. From mid-level. Variant 41a, of black ware, differs from the type in having a concave neck and externally thickened, under-cut groove on inner side of the rim. Of medium fabric it is treated with black slip which extends internally upto the neck. From upper level. Variant 41b, differs from the type in having a concave neck and externally thickened internally grooved rim. Of medium fabric it is treated with black slip which extends internally upto the neck. From upper level. Variant 41c, differs from the type in having a round collared out-turned with concave neck and grooved shoulder. Of medium fabric and treated with black slip. From upper level.

Type 42. Vase of red ware with horizontally splayed out internally thickened and grooved rim[2] with corrugated and elongated cylindrical neck. Of medium fabric it is treated with bright red slip on both sides and well fired. From upper level.

Type 43. Vase of red ware with horizontally splayed out, thickened rim[3] and prominently cordoned elongated neck. Of medium fabric and treated with red slip on both sides. From early level. Variant 43a, of red ware having a vertical neck out-turned externally thickened rim. Of medium fabric and treated with a thin slip. From mid-level. Variant 43b, of red ware differs from type in having a splayed out thickened, internally grooved rim and concave neck. Of medium fabric it is treated externally with slip which has turned blackish brown. From mid-level.

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1 Dikshit, M. G., *Op. cit.*, (Bombay, 1968), p. 42, fig. 13, 2.

2 *Ibid.*, p. 43, fig. 14, 39 (Similar type available in Maurya period).

3 Deo, S. B. and Gupte, R. S., *Op. cit.*, (1974), fig. 6, 17 a, and Sharma, G. R., *The Excavations at Kausambi,* (1960), fig. 10, 55.

Type 44. Vase of red ware with a short vertical neck, out-turned externally thickened and obliquely cut rim. Of medium fabric and devoid of any surface treatment. From upper level.

Type 45. Vase of red ware with an out-curved drooping featureless rim and internally weakly carinated neck. Of medium fabric and with gritty core it is treated externally with red slip which extends below the rim (Internally also). From mid-level.

Type 46. Vase of red ware with vertical externally thickened grooved rim[1] with a little under cut. Of medium fabric it is treated with red slip and well-fired. From mid-level.

Type 47. Vase of red ware with incurved externally beaded and horizontally flanged rim and concave neck. Of medium fabric and treated with red slip on both sides. From upper level.

Type 48. *Kadava* (Telugu) of red ware with an externally thickened and internally under-cut rim. Of medium fabric it is treated with red slip on both sides and well baked. From upper level.

Type 49. *Kadava* (Telugu) of red ware with featureless funnel shaped rim[2] with cordoned concave neck. Of medium fabric and treated with bright red slip on both sides. From upper level.

Type 50. Vase of red ware with an incurved thickened rim grooved internally and cordoned externally and a concave neck. Of medium fabric and treated with red slip externally. From upper level. Variant 50a, differs from the type in having a thick short rim with a pronounced cordon externally. Of medium fabric and treated with deep red slip on both sides. From mid-level.

Type 51. Vase of red ware with externally thickened and internally grooved rim and a short concave neck. Of medium fabric and treated with deep red slip on both sides. From mid-level. Variant 51a[3], differs in having a rim externally under-cut. Of medium fabric and treated with deep red slip. From mid-level.

Type 52. *Kadava* (Telugu) of red ware with an out-turned thickened rim and multi-grooved vertical neck. Of medium fabric and treated with slip on both the sides. From mid-level.

Type 53. *Kadava* (Telugu) of red ware with a vertical externally thickened internally grooved rim. Of medium fabric and teated with red slip in on the sides. Indifferently fired with unoxidized smoky core in mid-section. From upper level.

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[1] Dikshit, M. G., *Op. cit.*, (1968), p. 42, fig. and Deo S. B. and Gupte R. S., *Op. cit.*, (1974).

[2] Dikshit, M. G., *Op. cit.*, (1968), p. 67, fig. 25, 177.

[3] *Ancient India,* No. 4, p. 247, fig. 30, 19, variant rim.

Type 54. *Kadava* (Telugu) of red ware with externally round collared sharply under-cut and internally grooved rim and concave neck. Of medium fabric treated with red slip on both sides. From upper level.

(Fig. 38, 55-71) :

Type 55. Dish of red ware with featureless externally thickened rim and seemingly with round bottom. Of medium fabric and treated with red slip on both sides. From mid-level. Variant 55a, of red ware differs from the type in having flat-topped internally grooved rim and a flat base. Of medium fabric and treated with red slip on both sides. From unstratified deposit.

Type 56. Shallow dish of red ware with a featureless thickened grooved rim. Of medium fabric and treated on both sides with a thick red slip, and is well-baked. From mid-level.

Type 57. Shallow dish of black ware with internally elliptically collared rim. Of fine fabric and treated with black slip on both sides. From upper level. Variant 57a, differs from the type in having an internally collared rim. It is of red ware, medium fabric without any surface treatment. From mid-level. Variant 57b, differs from the above in having internally round-collared rim. It is of medium red ware of medium fabric.

Type 58. Dish of red ware with nail-headed and grooved rim with round. base Of medium fabric and devoid of surface treatment. From mid-level.

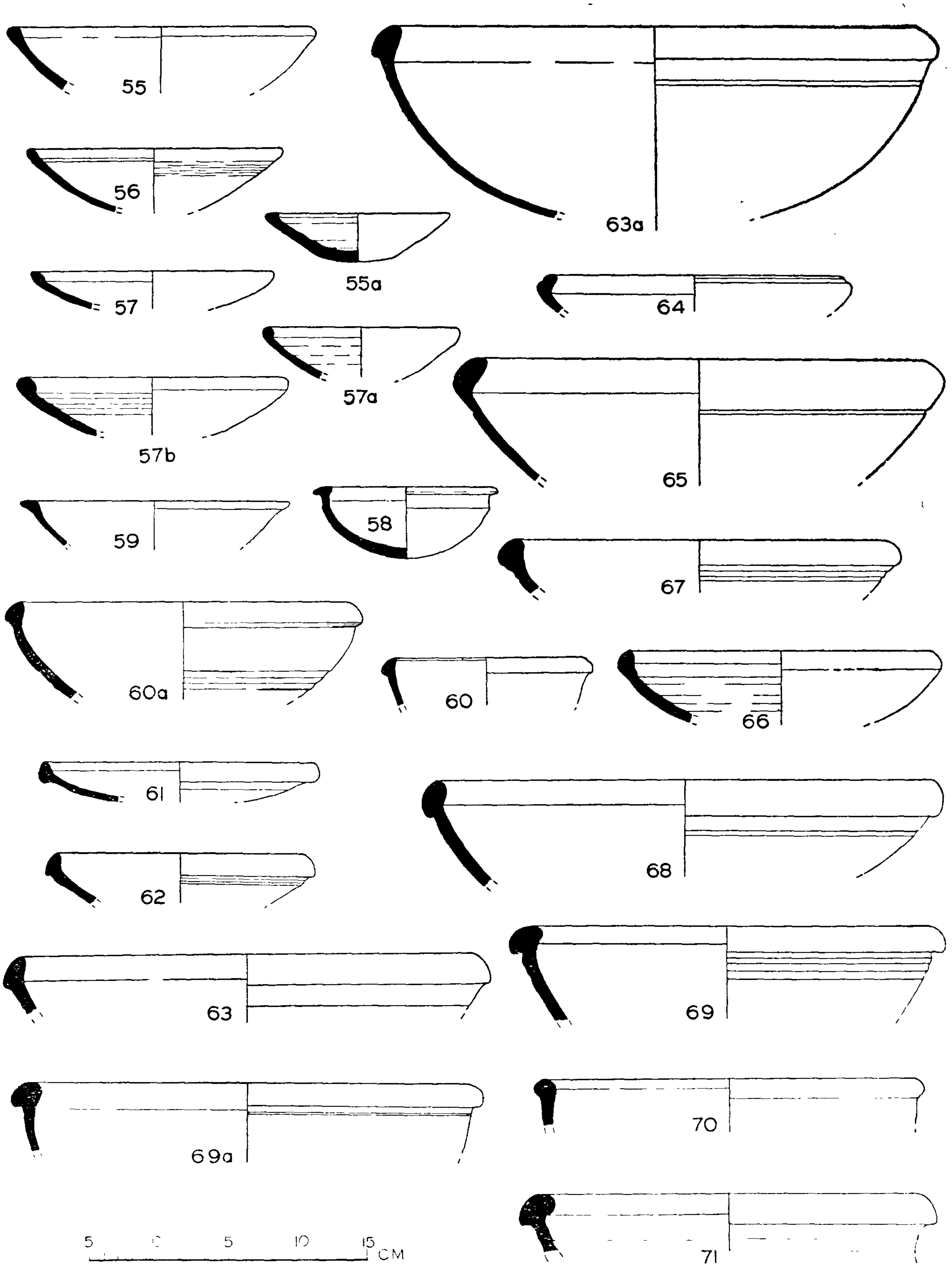
Type 59. Dish of black ware with horizontally flanged and flat-topped rim with seemingly convex base. Of fine fabric and treated with black slip and fine polish on both sides. From upper level.

Type 60. A deep bowl of black ware with an incurved externally elliptical collared rim. Of medium fabric and devoid of any surface treatment. From upper level. Variant 60a, of red ware having an incurved, externally oval-collared rim and possibly having a rounded base. Striations are seen on external surface. Of coarse fabric and treated with red slip on both sides. From upper level.

Type 61. Shallow dish of black ware having a vertical thickened rim and possibly with convex base. Of medium fabric and devoid of surface treatment. From upper level.

Type 62. Shallow dish of red ware with a vertical oval collared externally under-cut rim. Of medium fabric and treated with red slip on both sides. From mid-level.

Type 63. Trough of chocolate ware with slightly incurved and externally oval-collared cordoned rim. Of medium fabric and treated with a slip which has turned into yellowish brown colour. From upper level. Variant 63a, is having an incurved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5 0 5 10 15 CM

FIG. 38

rim with externally cordoned and grooved shoulder with a round bottom. Of coarse fabric and treated with reddish borwn slip on both sides. From upper level.

Type 64. Basin of red ware with a closing externally grooved and ridged rim. Of medium fabric and treated with brownish slip on both sides. From upper level.

Type 65. Trough of chocolate ware with incurved thickened externally oval-collared rim and grooved profile closing to a convex base. Of coarse fabric it is treated with chocolate slip on both sides and indifferently fired with smoky core in the middle. From mid-level.

Type 66. Basin of red ware with a short thick internally vertical, externally oval-collared rim and probably round base. Striations are visible internally. Of medium fabric and treated with red slip on both sides. From upper level.

Type 67. Basin of red ware with externally thickened rim and grooved body. Of coarse fabric and treated with deep red slip on both sides. From mid-level.

Type 68. Trough of red ware with an incurved, externally oval-collared rim and grooved body. Of coarse fabric, treated with red slip on both sides. From mid-level.

Type 69. Trough of red ware with a round-collared externally under-cut rim and grooved body. Of coarse fabric and treated with red slip on both sides. From upper level.

Type 70. Trough of red ware with vertical externally round collared rim and vertical sides. Of medium fabric and treated with red slip on both sides. From early level.

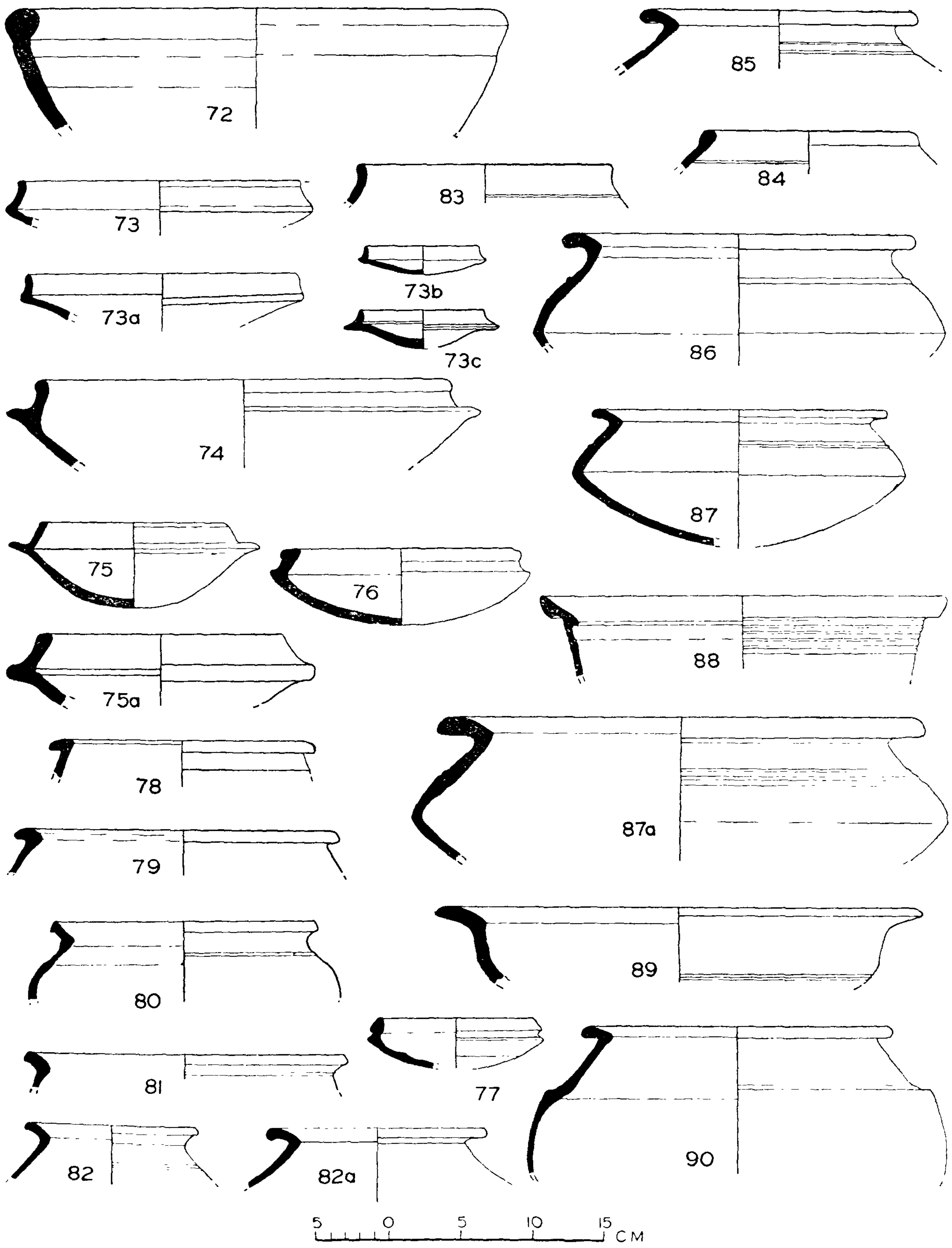
Type 71. Trough of red ware with a sharply incurved oval-collar externally under-cut rim with almost straight sides. Of coarse fabric and treated with red slip. From mid-level.

(Fig. 39, 72-90) :

Type 72. Trough of red ware with an internally round collared rim and probably a round base. Of coarse fabric it is treated on both sides with a slip which has turned red externally and blackish brown internally. From upper level.

Type 73. Lid-cum-bowl of red ware with a featureless, top-flattened closing rim and bluntly flanged (?) waist. Of medium fabric and devoid of any surface treatment. From mid-level. Variant 73a,[1] differs from type in having a vertical fetureless rim and seemingly a saggar base. Of medium fabric and devoid of any surface treatment. From upper level. Variant 73b, differs in having a convex base and is of miniature size. Of fine fabric and treated with red slip on both sides. From

[1] *Ancient India,* No. 4, p. 240, fig. 28, T 164.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82a
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FIG. 39

mid-level.[1] Variant 73c, differs in having a sharp flanged waist[2] and convex base. Of fine fabric and treated with red slip on both sides. From upper level.

Type 74. Lid-cum-bowl of red ware with an out-curved, externally thickened rim and horizontally flanged waist seemingly with a convex base. Of medium fabric and treated with a thin red slip. From mid-level.

Type 75. Lid-cum-bowl of red ware with a sharply closing, featureless rim and prominent horizontally-flanged waist[3] and round base. Of medium fabric it is treated with wash and indifferently fired. From mid-level. Variant 75a, differs from type in having a thick closing featureless rim and bluntly flanged-waist. Of red ware medium fabric and treated with red slip on both sides. From mid-level.

Type 76. Lid-cum-bowl of black ware with a short, externally thickened rim flattened at the top, with insignificantly flanged waist and convex base. Of medium fabric and treated externally with black slip. From mid-level.

Type 77. Lid of grey ware with an externally thickened externally bevelled[4] and under-cut rim and a slightly flanged-waist closing to a convex base. Of medium fabric it is treated with a thin slip which has turned ashy grey on both the sides. From mid-level.

Type 78. Cooking vessel of red ware with clubbed-rim and incurved sides. Of medium fabric and treated externally with red slip. From mid-level.

Type 79. Cooking vessel of black ware with a horizontally splayed out rim and oblique shoulder. Of medium fabric, it is burnished and treated with black slip externally. From upper level.

Type 80. Vase of black ware with a splayed out externally thickened rim having an internally ridged neck and oblique shoulder with convex profile. Of medium fabric, externally burnished and treated with black slip. From a pit ascribable to upper level.

Type 81. Vase of black ware with an out-turned externally thickened rim and oblique shoulder, externally burnished and slipped in black. From upper level.

Type 82. Vase of red ware with sharply out-turned[5] and grooved oblique shoulder. Of medium fabric and treated externally with red slip. From mid-level. Variant 82a, differs in having a prominently, out-turned externally thickened rim with oblique shoulder. Soot marks indicating its usuage as a cooking vessel are visible

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[1] Deo, S. B., and Joshi, J. P., *Op. cit.*, (1972), Part I, fig. 15, 96.

[2] *Ancient India,* No. 5, p. 83, fig. 7, 28.

[3] *Ancient India,* No. 13, p. 78, fig. 26, 7 and *O. cit.*, p. 83, fig. 7, 29.

[4] Dikshit, M. G., *op. cit.*, (1968), fig. 12, 12, variant rim.

[5] *Ancient India,* No. 4, p. 241, fig. 29, T 172, variant rim.

over the rim and the shoulder. Of medium fabric and treated externally with red slip. From upper level.

Type 83. Vase of black ware with an out-turned featureless rim. Of medium fabric and and treated with black slip on both sides. From mid-level.

Type 84. Vase of red ware with a closing externally round-collared rim and oblique shoulder. Of medium fabric and treated externally with red slip. From upper level.

Type 85. Vase of red ware with an out-turned externally thickened rim[1] with internally carinated neck and double grooved oblique shoulder. Of medium fabric, it is treated externally with brownish red slip which extends upto the rim from inside. From mid-level.

Type 86. Wide mouthed vase of red ware having an out-turned externally thickened rim and marked by an internal ridge and convex shoulder with a cordon and a weakly carinated waist. Of medium fabric, it is treated externally with red slip which extends upto the rim inside. Soot marks are visible at the bottom. From upper level.

Type 87. Cooking vessel, *Chatti* or daka, of red ware with an out-turned rim[2] having an internal carination at the neck, cordoned convex shoulder and carinated waist with round bottom. Of medium fabric and treated with red slip internally upto the neck. The soot marks on exterior bottom indicate its use as a cooking vessel. From upper level. Variant 87a, differs in having a wider mouth with prominently thickened horizontally splayed out rim, carinated neck and oblique double grooved shoulder. It has a carinated profile and probably with round base. Of medium fabric, it is treated externally with bright red slip which extends upto the rim inside. From upper level.

Type 88. Trough of black ware with a sharply out-turned externally thickened rim with an internal flanged neck and grooved vertical shoulder. Of coarse fabric, it is treated externally with black slip and internally on the rim. From upper level.

Type 89. Tulip shaped vase of red ware with a splayed out featureless rim and vertical sides with grooved, weakly carinated profile and probably a convex base. Of coarse fabric and treated with red slip on both the sides. From upper level.

Type 90. Vase of red ware with horizontally splayed out rim, internally marked by ridge and oblique shoulder ledged with body. Of medium fabric, it is treated externally with brownish red slip and fired indifferently. From upper level.

(Fig. 40, 91-107a) :

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[1] Subrahmanyam, R., *op. cit.,* (1964), fig. 21, 99.

[2] *Ancient India,* No. 4, p. 241, fig. 29, T 177 and *Ancient India* No. 20 and 21, p. 88, fig. 26, 21 b and Deo, S. B. and Gupta, R. S., *op. cit.,* (1974), Fig. 8, 39, and Subbarao, B., *Op. cit.* (1953), fig. 14, 2.

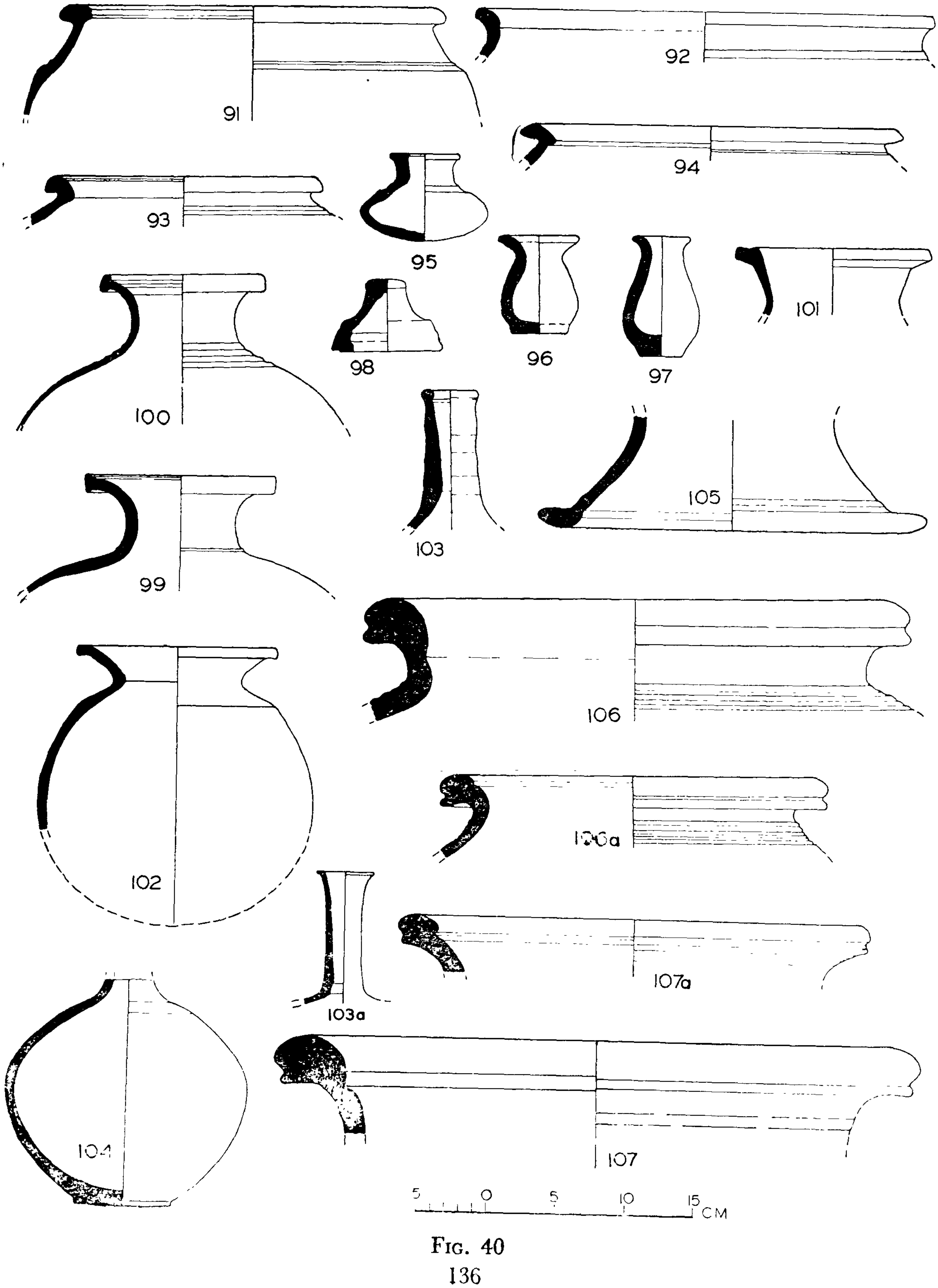
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FIG. 40

Type 91. Vase of red ware with a nail-headed rim, oblique shoulder with ledged profile and a cordon at the juncture of the body. Of medium fabric, it is treated externally with bright reddish brown slip and indifferently fired. From upper level.

Type 92. Vase of black ware with out-turned featureless rim. Of coarse fabric and treated with black slip externally and on the rim inside. From upper level.

Type 93. Vase of red ware with an out-curved thickened under-cut and internally grooved rim with weakly carinated neck and oblique shoulder. Of coarse fabric, indifferently fired and treated with red slip. From unstratified deposit.

Type 94. Vase of red ware with an out-curved, thickened, internally beaked rim with oblique shoulder. Of medium fabric and treated with red slip. From unstratified deposit.

Type 95. Miniature pot of red ware with a vertical flat-topped externally thickened rim, oblique shoulder and convex base. Of medium fabric and treated with red wash. From mid-level.

Type 96. Miniature pot of dull red ware with an out-turned thickened rim having an oblique shoulder and convex profile with string-cut flat base. Of medium fabric and devoid of any surface treatment. From upper level.

Type 97. Miniature *lota* of dull red ware with an elongated neck, short out-turned featureless rim and convex profile, with a string-cut base. Of medium fabric and devoid of any surface treatment. From upper level.

Type 98. Lid of dull red ware with a flat based rim and projected ridge and having a flat-topped round knob.[1] Of medium fabric and devoid of any surface treatment. From upper level.

Type 99. Vase of red slipped ware with a flared, thickened and vertically cut rim, having a concave neck and convex shoulder. Of medium fabric, indifferently fired and treated with bright red slip externally, and internally only upto the neck. From a pit ascribable to mid-level.

Type 100. Vase of black slipped ware with a flared, thickened, under-cut and top-grooved rim with concave neck and corrugated shoulder having probably a globular body. Of medium fabric and treated externally with black slip and internally on the rim. From a late pit.

Type 101. Vase of red ware with horizontally flanged, thickened vertically cut rim with vertical neck. Of medium fabric, indifferently fired and treated with a thin red slip on both the sides. From mid-level.

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[1] Abdul Waheed Khan, *Yeleswaram Excavation*, (Hyderabad, 1963), fig. VIII, 7.

Type 102. Vase of red ware with a splayed out vertically cut rim and an oblique shoulder and convex body with a weak carination at the shoulder. Of medium fabric and and treated externally with red slip. From upper level.

Type 103. Neck of a *kuja (surahi)* of red ware which is elongated, vertical and pipe-like having corrugations with an externally thickened rim.[1] Of medium fabric and treated externally with deep red slip. From mid-level. Variant 103a, differs in having an out-turned thinned rim with concave sides. Of medium fabric and devoid of any surface treatment. From mid-level.

Type 104. A *kuja* of red-slipped ware with convex shoulder and bulbous body having a flat base.[2] Of medium fabric, it is treated externally with deep red slip which contained black patches due to indifferent firing. From upper level.

Type 105. Ring stand of black ware with an externally horizontally splayed out, internally thickened grooved-rim base with concave sides. Of coarse fabric and treated on both sides with black slip. From upper level.

Type 106. Storage jar of dull red ware with out-turned externally thickened and cordoned rim with short internally grooved neck having a multi-grooved shoulder. Of coarse fabric and devoid of any surface treatment. From mid-level. Variant 106a, differs from type in having a prominent externally cordoned and outcurved short neck having an internal groove on the rim. Of coarse fabric, indifferently fired and treated with red slip externally which extends inside upto the rim. From mid-level.

Type 107. Storage jar of dull red ware having an out-turned, internally thickened, grooved and externally cordoned rim,[3] with concave neck of coarse fabric and devoid of any surface treatment. From mid-level. Variant 107a, having a less pronounced cordon and thickened rim of smaller dimensions. Of coarse fabric and treated with red slip on both sides. From upper level.

(Fig. 41, 108-114) :

Type 108. Storage jar of dull red ware with an oval-collared rim with finger impressions left on outside of rim, which is evidently hand-made. Of gritty coarse fabric and devoid of any surface treatment or decoration. From mid-level.

Type 109. Trough of dull red ware with an incurved thickened rim and having probably round base.[4] Of gritty coarse fabric, indifferently fired and without any surface treatment. From upper level.

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[1] Subrahmanyam, R., *Op. cit.*, (1964), fig. 22, 125.

[2] *Ibid.*, fig. 21, 104, variant body and base.

[3] Abdul Waheed Khan, *op. cit.*, (1963), fig. 18, 1.

[4] *Ancient India*, No. 13, p. 80, fig. 27, 18 a.

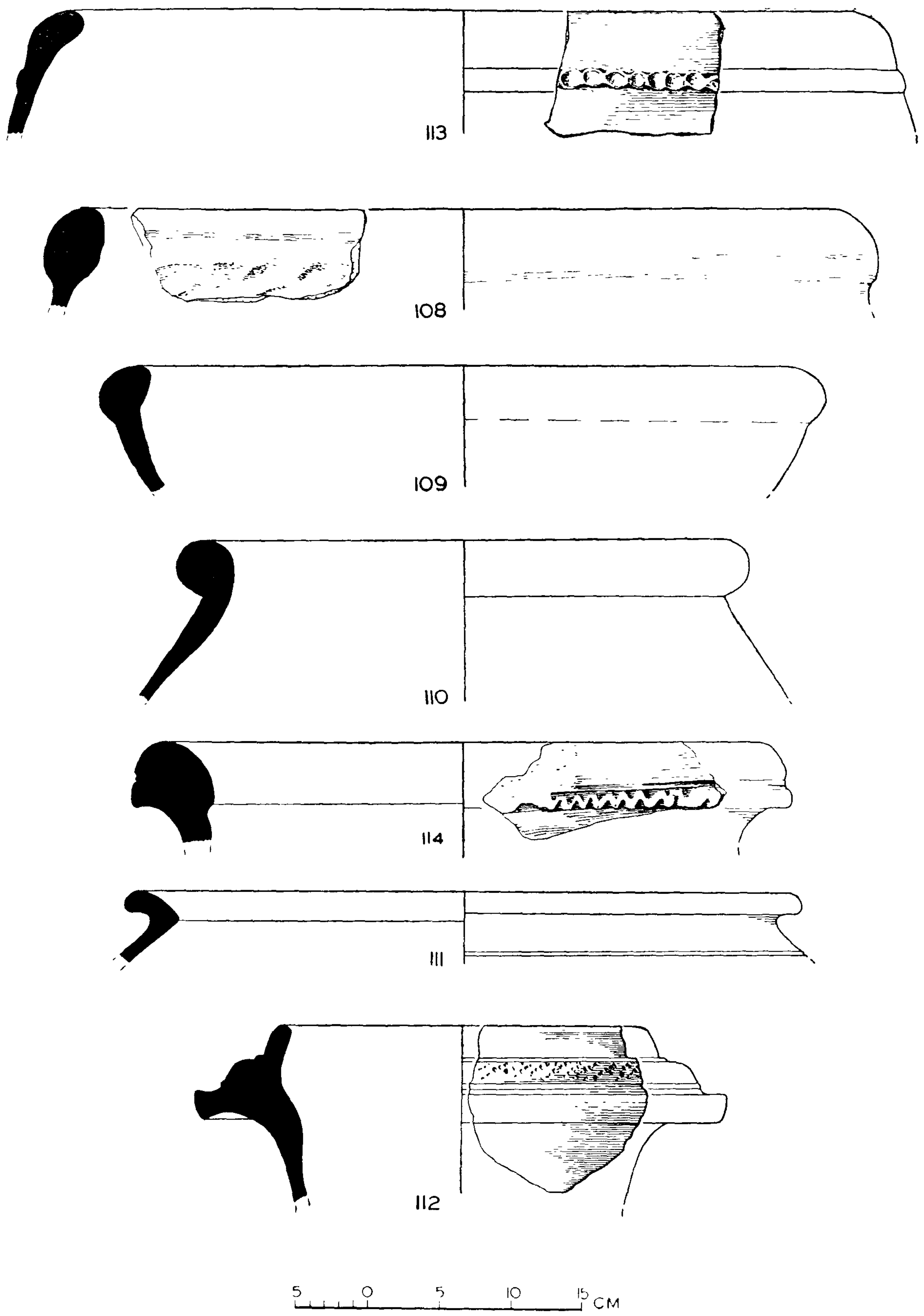

FIG. 41

Type 110. Storage jar of red ware with an externally round collared rim with oblique sides. Of coarse fabric and treated with deep red slip on both sides. From mid-level.

Type 111. Wide-mouthed trough of red ware with an out-turned externally thickened rim[1] and internally carinated neck having oblique shoulders. Of coarse fabric and treated with deep red slip on both the sides. From mid-level.

Type 112. Narrow-necked storage jar of red ware, possibly with concave neck having a slightly incurved, externally thickened and horizontally flanged rim. The external top portion of the rim is decorated with series of incised dots forming rows in criss-cross pattern. Of gritty coarse fabric, it is treated with red slip on both sides and fired indifferently. From mid-level.

Type 113. Storage jar of red ware with an incurved externally thickened rim. Externally below the rim a series of finger tip impressions in a row are given as a decorative band. Of gritty coarse fabric, it is treated with red slip externally and fired indifferently. From upper level.

Type 114. Stronge jar of red ware with an out-curved internally thickened, externally uncer-cut and cordoned rim. Externally, over the cordon, a decoration of wavy line is shown with incised vertical grooving. Of coarse fabric, it is treated with deep red slip on both sides and well fired. From upper level.

The following decorated sherds are described and illustrated below :

(Fig. 42, 1-18) :

1. A fragment of red ware with a stamped motif on the shoulder. This motif looks like a *triratna* symbol attached with a pedestal. The impression seems to have been made by a perfectly made stamp with sharp-cut outline of uniform thickness. Of medium fabric and bears a thin red wash. From mid-level.

2. Fragment of a red ware vase of multi-grooved shoulder decorated with a band of incised criss-cross design followed by another band of oblique lines and a row of stamped triangular motif. Of coarse fabric and treated externally with thick red slip. Indifferently fired with smoky core. From mid-level

3. Fragment of a storage jar of red ware with a band of incised zig-zags in doubles followed on either side by a row of oblique slashes. Of coarse fabric, it is treated with thick red slip and well fired. From mid-level.

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[1] Subrahmanyam, R., *op. cit.*, (1964), fig. 28, 74, and Dikshit, M. G., *op. cit.*, (1968), p. 42, fig. 13, 17.

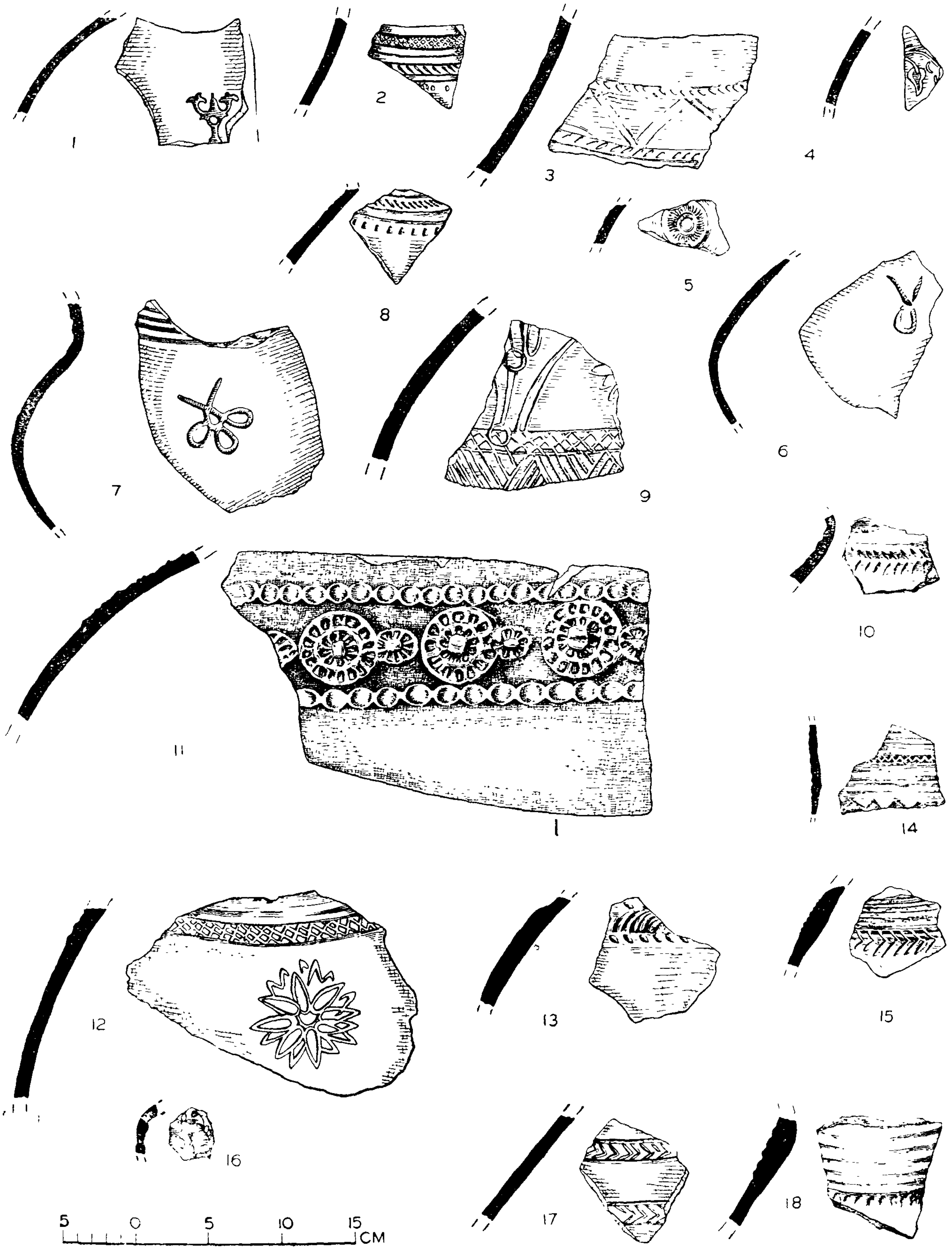

FIG. 42

4. Fragment of a red ware vase with an incised creeper (?) design bearing leafy motifs. Of medium fabric and treated externally with red slip, indifferently fired. From early level.

5. Fragment of a red ware vessel with a stamped design of multi-spoked wheel motif in relief. Of gritty coarse fabric, it is treated externally with red slip and fired, indifferently with smoky core. From mid-level.

6. Fragment of a dull red ware with an impression of a cable or twisted rope in the form of a looped course or what looks like Brahmi 'ma'. Of medium fabric and treated with thin red wash. From mid-level.

7. Fragment of dull red ware vase with a decoration of multi-looped cross made by twisting a thread in that form and pressing against the surface. Of medium fabric and treated externally with a thin red wash. From mid-level.

8. Fragment of a red ware having a multi-grooved shoulder decorated with two bands, one containing a series of oblique incised strokes and the other a series of stamped triangles. Of coarse fabric and treated externally with red slip. From upper level.

9. Fragment of storage jar of red ware with a band of incised zig-zags, followed above by another band of incised latticed design or criss-cross pattern. Above these two bands, is a stamped floral motif, of which the stem portion only is visible with a few traces of petals. Of coarse fabric, it is treated externally with thick red slip and well fired. From mid-level.

10. Fragment of a red ware with a design of palm-leaf motif incised over the corrugated shoulder. Of medium fabric, it is treated externally with red slip and indifferently fired. From mid-level.

11. Fragment of a storage jar in red ware decorated over the shoulder with a broad band of design in spoked motifs on either side, i.e. below and above in applique. The wheels are concentric double circles connected by radiating spokes from the central hub and these motifs are alternated with similar but smaller and single circle spoked-wheel motifs. The design is made in relief by stamping over the applied clay, but not incised. Of coarse fabric with sand and quartz, it is treated externally with thick red slip and well fired. From mid-level.

12. Fragment of a storage jar (?) ware with stamped multipetalled floral motif (lotus) over grooved shoulder following a band of criss-cross grooves forming lattice motif. Of coarse fabric, it is treated externally with red slip and well-fired. From mid-level.

13. Fragment of a red ware vase with a band of cable design in applique, followed below by a row of incised eyelets. Of coarse fabric and treated externally with red slip. From upper level.

14. Fragment of a black ware probably neck portion of a vase with corrugations followed by an incised groove and zig-zags. One of the ridges of the corrugations is made into a meandering ridge by incising dots alternately on either side. Of medium fabric, it is externally burnished and treated with black slip. From early level.

15. Fragment of a brown ware having a multi-grooved shoulder with a palm leaf motif imprinted below the grooves. Of coarse fabric and treated externally with reddish brown or chocolate slip. From upper level.

16. Fragment of a red-polished ware with an incised decoration of floral motif with foliage and also the motif of lotus seemingly from a mould. It is made of fine clay and well-burnt. From upper level.

17. Fragment of a red ware vessel having a decoration in two bands over the shoulder, each consisting a series of incisious in 'V' shape and turned side-wards between two grooved lines. Of coarse fabric, it is treated externally with red slip and indifferently fired. From uper level.

18. Fragment of a red ware jar with corrugations followed by a row of stamped triangular motifs. Of coarse fabric and treated with red slip externally. From upper level.

(c) **Period III (Medieval Pottery)** :—

Pottery of Period III which is ascribable to the medieval period, (*c*.A.D. 1100 to 1600), is mainly of black ware with a little representation of red ware. The fabric ranges from medium to coarse and was entirely potted on wheel, the bulk of it is without any surface treatment. However, in a few instances, it is treated with a thin slip and also burnished. The texture is absorbent in nature. The *degraissants,* such as, sand and grit are present in the core. The pottery is fired under reducing conditions which caused the black surface. However, in a few cases, a burnt ashy grey surface is seen. Besides, a meagre quantity of dull red ware with a thin slip is also noticed in this period. The types available in this ware are spout vessels and vases. But these exhibit an unoxidized smoky core indicating their ill-baked conditions.

The pottery in this period is more of utilitarian character and the general types are bowls, basins, lids, *lotas,* spouted vessels, vases, frying pans, wide-mouthed carinated cooking vessels, etc., and some of these types closely resemble those of Medieval Period at Maski and continue to survive to the present.

The pottery is largely characterised by grooves over the shoulders with stamped decorations. The decorations over the pottery mainly comprise of multi-grooved pattern on the shoulder, stamped designs in different combinations, zig-zag patterns, vertically pointed strokes, connected semi-circles or wavy lines, grooved motifs some of which present at Maski are also seen occuring here. Generally they are made either by incision or by stamping.

A few selected types are illustrated below :

(Fig. 43, 1-20) :

Type 1. Shallow bowl of grey ware with externally thickened and grooved rim. Of medium fabric, it is devoid of any surface treatment.

Type 2. Deep bowl of black ware with incurved internally thickened rim and externally multi-grooved profiles. It is of medium fabric and treated externally with a black wash. Variant 2a, differing from the type in having an internally projected flat-topped rim. Of medium fabric, it is treated with slip and indifferently fired. Variant 2b, differs from type in having straight sides and internally thickened flat-topped rim. Of medium fabric, it is treated with black slip on both sides.

Type 3. Lid-cum-bowl of black ware with an incurved externally thickened rim and a prominently ridged profile. Of medium fabric and treated externally with black slip. From a pit and ascribable to Period III. Variant 3a, differs from type in having a slightly out-curved featureless rim externally with a horizontal flange and convex base. Treated with black slip on both sides and is of medium fabric. From a pit of Period III. Variant 3b, differs from type in having a short straight, blunt, featureless rim with less prominent horizontal flange externally, and with a round base. Of medium fabric and treated with ashy grey wash.

Type 4. Miniature *lota* with out-turned externally thickened rim and a single grooved body. Of medium fabric and devoid of any surface treatment. This type closely resembles type 4(b) of Maski.[1] Variant 4a, *lota* of dull black ware with out-turned externally thickened rim, short concave neck, almost straight sides and a deep groove near the shoulder. Of medium fabric and treated with dull black wash.

Type 5. *Lota* of black ware with out-curved externally flanged rim and concave shoulder with straight sided body and flat base. It is multi-grooved at the shoulder. Of medium fabric and treated with black slip externally.

Type 6. Cup-shaped lid of black ware with a horizontally splayed out rim having a short vertical flange. Of medium fabric treated with a thin black slip. From a pit ascribable to Period III. Variant 6a, differs from its type in having an externally under-cut rim and prominent vertical flange and has a round base. Of medium fabric and treated with black slip.

Type 7. Lid-cum-bowl of dull red ware having an externally round collared and horizontally splayed out rim and flat base. Of medium fabric, devoid of any surface treatment but having a smoky surface. From a pit ascribable to Period III.

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[1] *Ancient India,* No. 13, p. 84, fig. 28, 4 b.

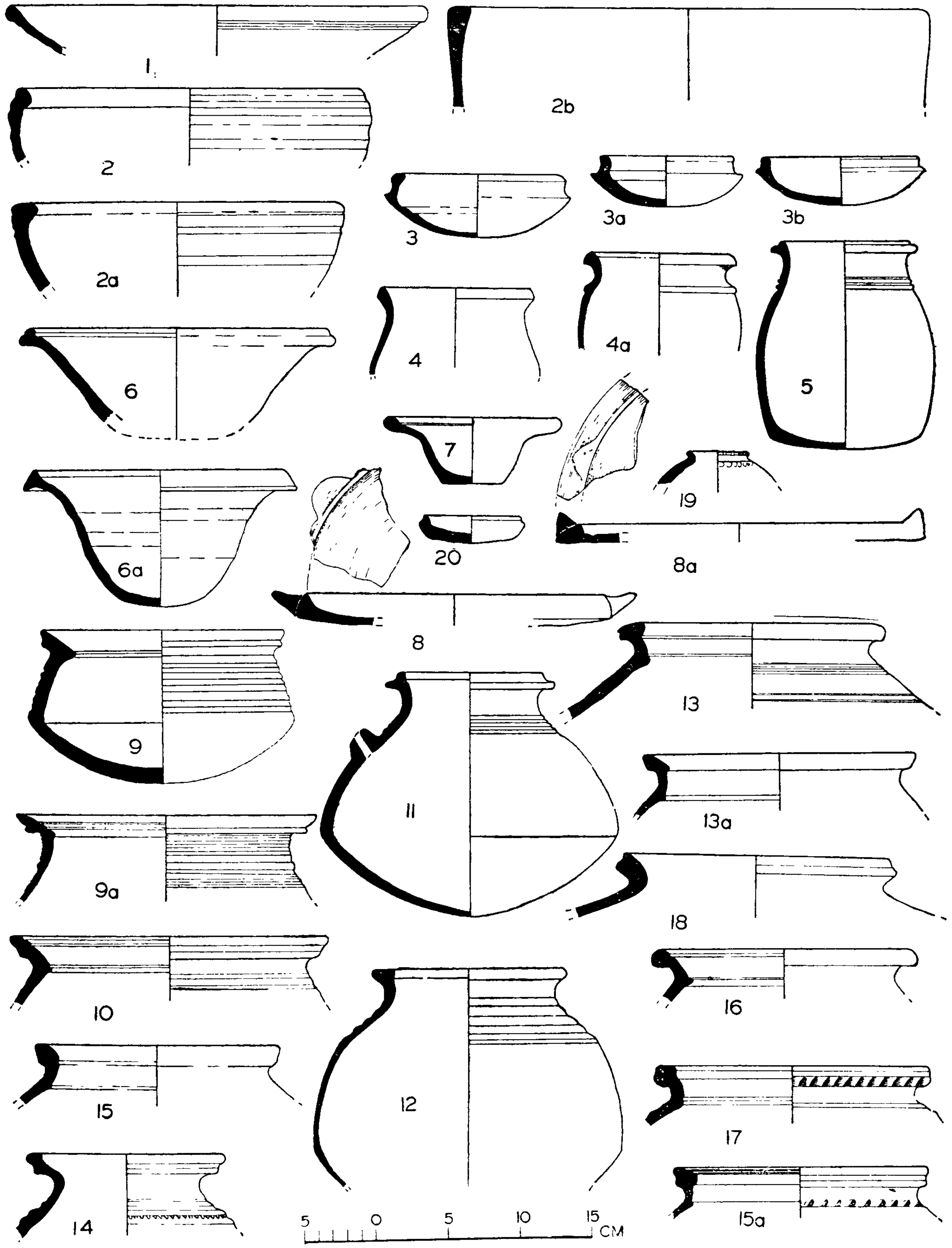
1
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Fig. 43

Type 8. Frying pan of grey ware with a vertical straight but triangular pointed rim having a horizontally attached lug probably on either side to hold it. Burnt marks internally suggest over cooking. Of medium fabric and devoid of surface treatment. From a pit ascribable to Period III. Variant 8a, differs from type in having a triangular collared-rim and a lug vertically attached over the collar. Of medium fabric with no surface treatment.

Type 9. Wide mouthed cooking vessel, *Chatti* (in Telugu), of black ware with an out-turned externally grooved rim internally marked by a ridge, multi-grooved oblique shoulder, carinated profile and round base. Of medium fabric and treated externally with black slip. Variant 9a, differs from type in having a rim and with a ridge externally and multi-grooved concave shoulder having a weak cordon. Of coarse gritty fabric, indifferently fired having a smoky core in the centre and is treated externally with dull grey slip.

Type 10. Wide-mouthed vessel of black ware with out-turned rim externally depressed, internally ridged rim with oblique corrugated shoulder. Of gritty coarse fabric, it is treated externally with black slip and fired indifferently. From a pit ascribable to Period III.

Type 11. Spouted vase of red ware having out-curved externally flanged rim, multi-grooved oblique shoulder with carinated profile and convex base. A short spout is luted over the shoulder. Of medium fabric and treated with a thin red slip.

Type 12. Vase of black ware with vertical but externally thickened flat-ropped rim, multi-grooved shoulder and weakly carinated profile seemingly with a convex base. Of medium fabric and treated with black slip.

Type 13. Vase of grey ware with an out-turned oval-collared rim with internally grooved top, marked by a ridge internally near the neck, multi-grooved oblique shoulder and expanding profile. Similar type occurs at Maski.[1] Variant 13a, differs from type in having a prominent externally thickened but internally oblique cut rim and oblique shoulder. Of grey ware it is treated with slip and indifferently fired.

Type 14. Vase of red ware with splayed out externally grooved rim having a corrugated shoulder which is further distinguished by a series of finger-nail impressions. Of medium fabric, burnished and treated with bright red slip but indifferently fired leaving a smoky core in section. From a pit ascribable to Period III.

Type 15. Vase of grey ware with an out-turned thickened obliquely cut rim and oblique shoulder. Of medium fabric and treated with ashy grey slip externally. Variant 15a, differs from type in having externally grooved and internally under-cut rim. Further distinguished by oblique finger-nail incisions on the shoulder. Made of gritty fabric and treated with black slip. From a pit ascribable to Period III.

[1] *Ancient India,* No. 13, p. 84, fig. 28, 12, variant rim.

Type 16. Vase of black ware with a splayed out externally round-collared rim with internally carinated neck and seemingly oblique shoulder. Of gritty fabric and treated with black slip.

Type 17. Vase of grey ware with externally thickened flat-topped vertical rim which is decorated further by finger-nail impressions over the rim and having a corrugated oblique shoulder. Of gritty fabric and treated with ashy grey slip.

Type 18. Vase of black ware with everted externally thickened grooved rim and oblique shoulder. Of gritty fabric, burnished and treated externally with black slip.

Type 19. Miniature pot of black ware with an everted rim decorated externally with beaded design and concave shoulder which is decorated with an incised circular pendant (?) suspended from an incised line at their top. Of medium fabric and treated externally with black slip.

Type 20. Lamp dish of black ware, crudely finished and having a vertical, thinned and externally ledged rim. Of medium fabric and devoid of any surface treatment.

From a pit ascribable to Period III.

Decorated Sherds—Period III (Fig. 44, 1-16)

1. Fragment of a vase of grey ware with outcurved internally thickened rim. Of medium fabric, burnished and treated with a thin grey slip. It is grooved at the neck followed by two bands of vertical slashes on the shoulder and a band of stamped concentric circles, each circle containing two smaller circles within. A groove runs around at the top of the circles tangential to their outer circumference.
2. Fragment of a shoulder piece of a vase of grey ware of medium fabric and decorated with a band of triangular notches below a pair of grooves over the shoulder. The band of notches is followed by another band of stamped concentric circles below which stylized leaf-motif is stamped in a row. The shoulder is decorated with an applique band having series of flame like structures.
3. Shoulder piece of a grey ware vase of medium fabric having a pair of band with vertical strokes followed by series of stamped motifs in stylized leaf pattern pendented to a groove at their top.
4. Fragment of a grey ware vase of medium fabric with two bands of stamped pointed vertical slashes followed by deep grooves below each. Further below them a series of stylized pipal-leaf motifs are stamped duly pendented to a groove over their stem. From a pit of Period III. Similar motif occurs at Maski.[1]

[1] *Ancient India*, No. 13, PL. XXII-4.

5. Fragment of an ill baked red ware vase with a band of incised vertical stroke followed by a band of stylized fruits in triangular shape pointed down and duly suspended by their stems from a groove above. Below this at a distance over the shoulder is an applique band, of finger nail impression.

6. Fragment of a grey ware stamped with a series of drum-shaped or hour-glass-shaped imprints which create a diamond-shaped motif over the surface.

7. A multi-grooved shoulder of a grey ware vase with a band of incised oblique slashes on the shoulder followed by a groove below which are incised zig-zags in a connected band followed by another band of connected semi-circular incisions. similar designs occurs at Maski.[1] Of medium fabric. From Period III.

8. Fragment of a black ware vessel with multi-grooved shoulder with a ridged profile decorated with a series of pointed vertical incisions in two bands. Made of coarse gritty fabric. From a pit ascribable to Period III.

9. Fragment of a shoulder probably of a storage jar of black ware with multi-ridged shoulder. Two bands of decorative incisions in the pattern of thick vertical strokes are seen between the ridges. The lowest ridge is made by meandering incising dots alternately on either side of the ridge. Of coarse fabric, burnished and slipped externally in black. From a pit ascribable to Period III.

10. Fragment of a grey ware vase with a grooved shoulder and a ridge below and decorated with two bands of triangular stamped motif one in between the grooves and the other below the lowest groove. Of medium fabric and treated with dull black slip. From Period III.

11. Fragment of a dull red ware vase with two bands of decoration over the body. One with stamped dots and other in incised connected zig-zags. Of coarse fabric, devoid of slip, and with smoky core. From Period III.

12. Fragment of a grey ware vase with design of zig-zags incisions below a grooved line. Of coarse fabric, burnished and treated with slip. From Period III.

13. Fragment of red ware with a series of incised motifs of leaf, followed by a band of dots below. Of coarse fabric with gritty smoky core and treated with brownish red slip. Period III.

14. Fragments of red ware vase with a decoration of lotus petal or pipal-leaf motif around the shoulder followed by a band of two grooves with incised petal like vertical strokes in between them. Of coarse fabric, it is treated with dull brownish wash and having smoky core. From Period III.

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[1] *Ancient India*, No. 13, PL. XXII-3.

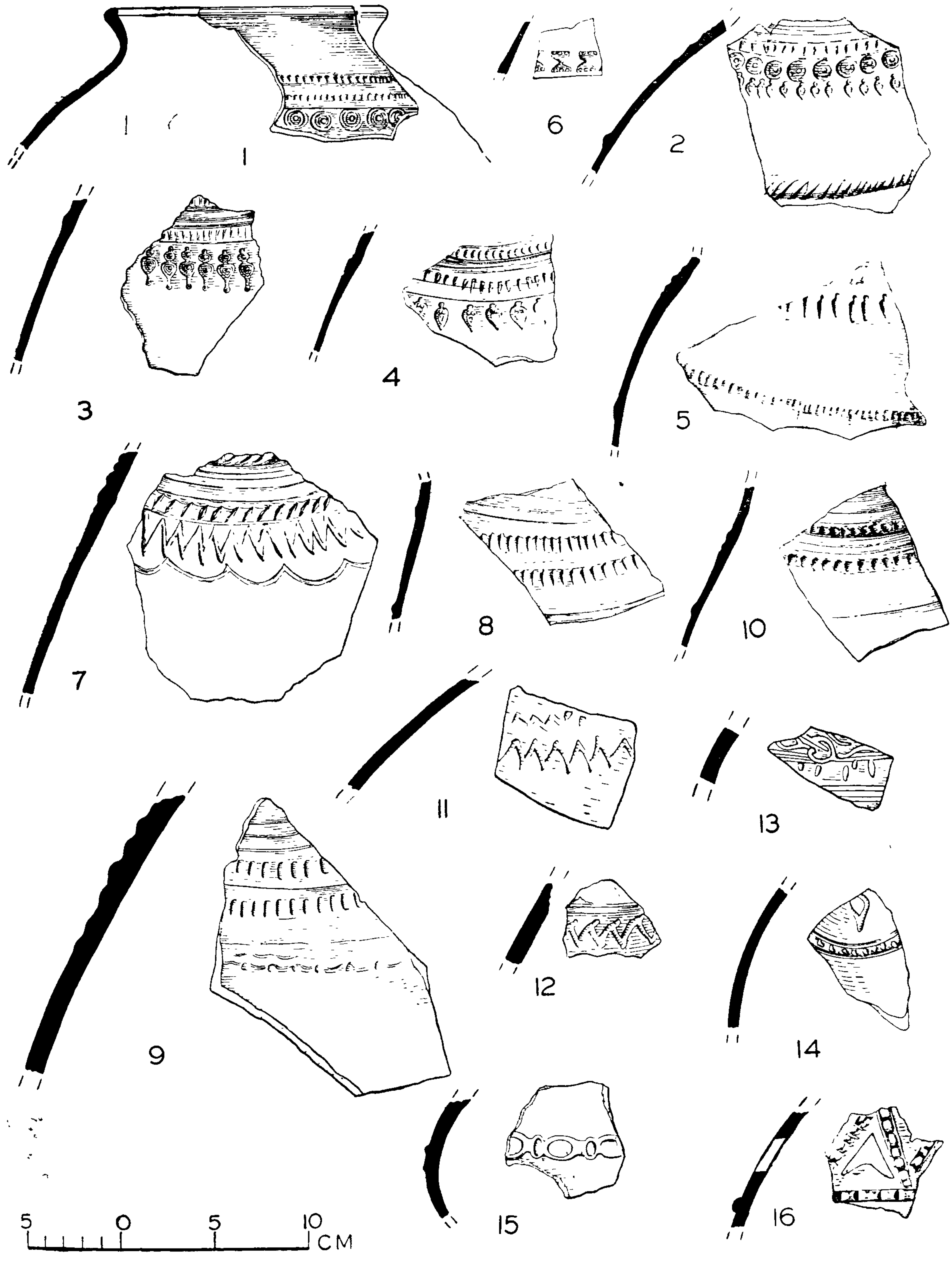

Fig. 44

15. Fragment of a black ware with an applique band of finger-print impressions in almond shape alternated with smaller, similar but vertically placed, motif. Of medium fabric, it is treated with thick black slip which is highly lustrous. From Period III.

16. Fragment of a dull brownish red ware. Probably a decorated shoulder portion of a trough connecting the rim to the body. It is treated with incised sequares in zig-zag bands forming triangulars connecting below with the ridge which is also incised with vertical strokes. The central portions of each triangular is made hollow by emptying the portions from the pot. Of coarse fabric and treated with dull brownish red slip. Ill fired and crudely finished. From Period III.

Pottery—Appendix I :

Identification report of two samples (Rouletted ware and Black-and-red ware) received from the Archaeological Survey of India, Excavations Branch, Nagpur :

Introduction :

Broken pieces of Rouletted ware and Black-and-red ware varieties of pots were powdered to 200 mesh size for carrying out the partial semi-quantitative estimation by 'Emission-spectrographic analysis, and 'X-ray analysis . These analyses were carried out to determine the composition of Rouletted and Black-and-red ware pots.

Partial semi-quantitative Estimation by Emission Spectrographic Method :

To determine the presence of different elements in the powdered samples the above method was employed. The analysis reavels the presence of following elements :

$Al_2 0_3$, SiO_2, FeO, $Na_2 0$, K_2O, CaO, MgO, etc. with molecules of hydro-oxides. Both samples are exactly similar in their chemical composition. Above-listed elements are noticed in both the samples.

X-ray analysis :

'Semi-quantitative Estimation' indicated the presence of different elements, mentioned above. To confirm the presence of exact clay minerals used in the preparation of pots, X-ray powder photographs of both the samples were taken by employing 'Debye Seherrer method' using iron target. The relevant features of the X-ray diffraction work are noted below

Radius of the film	: 5·8 cm
K-ray tube voltage	: 30 kv
Exposure time	14 hrs
X-ray current potential	: 10 milli amperes= Fek

The results are read by vickers scale and various 'd' values obtained from the X-ray film were calculated and compared with the A.S.T.M. standards. The clay minerals detected by this method in both the samples include nontomorillonite, nontronite and beidellite and is some times called 'Fuller's Earth group (or 'Smectite group'. The general formula is

$$M1\tfrac{2}{3}\,(Y^2, Y^3)^{4-6}\,(Si\text{-}Al)^{O}\,20\,H^4nH^2O$$

where M_1 =Na or ɣ2 C.
Y^2 =Mg or Fe
Y^3 =Al or Fe'''

Feldspar, Quartz and Ilmite are the other important constituents of the samples.

This group is especially notable for the way in which it takes up and loses water, and important base exchange properties. This group of clay minerals are formed by the alteration of basic rocks or other silicates low in potassium, under alkaline condition provided Ca and Mg are present.

Conclusion :

Above analysis reveals that both the samples are exactly similar in mineralogy and structure. It appears to me that different colour bandings noted in the pots are the outcome of the presence of some organic oily substances used as paint, all around the desired areas of the pots. Under special firing devices these painted areas turned black after fusion.

Observation :

The Analysis conducted on the two samples, Rouletted ware (Sample No. 1) and Megalithic Black-and-red ware (Sample No. 2), reveals the following facts.

(a) That both the ceramic industries are local in nature as the samples do not exhibit any difference of composition in mineral contents. Particularly that of Rouletted ware which is supposed to be alien to locality is similar to that of Black-and-red ware which is profuse in quantity and believed to be local in character and connected with the megalithic influence in the region.

(b) That the black and-red effect achieved on the Rouletted ware seems to be possibly due to the coating or paint applied at required areas over the surface which is also apparent from different coatings visible over the inner surface. The paint that was applied on the surface in desired portions of the pots exfoliates after firing and these exfoliations can be either removed easily or automatically gets separated from the areas leaving a lustrous or shining black surface.

(c) That the inverted firing technique as it is understood in the context of megalithic Black-and-red ware does not seem to have been adopted in the case of Rouletted ware and the effect of black and red achieved in the latter case is not akin to

that of megalithic Black-and-red ware. Therefore, the different firing technique, other than that as understood in the case of megalithic Black-and-red, either in individual chambers or in a sort of baking kiln, these two kinds of potteries might have been subjected to firing.

The Rouletted ware in major quantity in the region might, therefore, be of local origin due to the technical perfection of the local craftsman achieved and this fact indicates the import of the technique rather than the finished material in bulk which was also not an easy task.

VI. OTHER FINDS

A. STONE OBJECTS

(a) Sculptures :

In all, 3 human and one animal sculptures were recovered. The following are illustrated (Pl. XLVII) :

1. A mutilated sculpture of seated Ganapati, measures 6 cm in length. It presents late features. From Period III. Reg. No. 0557.
2. A plaque of maroon slate stone depicting—A male figure is in *tribhanga* posture holding sword in the right hand. Nose and lips are very prominent. Hair, ear and neck ornaments have been indicated by incisions. On waist, thighs and below the ankle also, there are incisions for decoration. There are two holes on both the sides of the head of the deity which have been provided probably to pass a string through them for suspending it against the wall. It measures 11·5 cm high and 6 cm wide. It seems to be a late sculpture depicting late features. From Period III. Reg. No. 844.
3. Sculptural fragment : The votive disc of sand-stone found in the excavation is elaborately decorated with floral designs on one side. Within the cable design border lotus petals are carved. As it is a fragmentary piece, the principal design could not be known. From Period III. Reg. No. 0451.

(b) Legged Querns :

Only two specimens of legged querns with four legs having a concave or depressed grinding surface were recovered from the site. This depression is due to continuous use of the querns.

As far as their use is concerned, we may presume that they were used for grinding grains, as is evident from the querns found in Iran[1] and Central Europe,[2] associated with kitchen and granary complex. It might have been used for grinding herbs and spices, too. Besides, here at Satanikota also, one specimen has been recovered from the granary itself and another was lying near by.

Although both the specimens are half-broken, no difficulty however was experienced in reconstructing their shapes, as these types are quite distinctive and common in India.

In both the specimens legs are differentiated but not separated. Both are made up of sandstone, broken from middle rear portions with hind legs broken in both specimens.

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[1] Schmidt, EF,; *Excavation at Tepe-Hissar,* Iran, (1931-32), pp. 59, 72 and 298.

[2] Childe, V. G., *The Dawn of European Civilization,* p. 138 (1947).

On a sculptural panel on the south side of the Eastern Gate of the Main Stupa at Sanchi a domestic scene is protrayed. Amongst the ladies depicted in this panel, who are engaged in doing several domestic works like winnowing, grinding, churning, etc., one is using a quern having four legs. Here it has been clearly demonstrated that the projected part of the grinding surface of the quern is at the farther end from the woman (?) and only this particular scene gives us an idea of the exact position in which the quern was placed while in use.

As far as its date is concerned, Dr. H. D. Sankalia has ascribed 'Mauryan-Guptan Age' to these querns.[1] In our case one of the querns has been found in layer (3) in association with the antiquities associated with the Satavahana Period. Besides, similar types of querns have been reported from other Satavahana sites like Kondapur, Paithan, etc. Querns found at Prakash, Tripuri, Maheshwar and Nevasa have been dated between the second century B.C. and the third fourth century A.D.[2] At Ujjain and Nagada, however, legged querns of identical shape are also found in the earlier strata ascribable to the fifth century B.C. and continue till as late as the 10th century A.D. [3]

The querns are described below (Pl. XLVI B) :

1. Half broken, stool type rectangular-dressed block of sandstone with two tapering legs which are differentiated but not separated. The upper grinding surface shows a saddle like depression. From Period II. Reg. No. 909.
2. Similar to above, From a pit. Reg. No. 992. Not illustrated.

(c) Mullers :

At Satanikota only three mullers were recovered, one from Period III and two from Period II. The material used is sandstone in both the cases. These mullers are principally of two varieties, (i) having circular section with heavier end, shaped like a dumb-bell, and (ii) cylindrical with roughly triangular section. Both these varieties were operated by both the hands held together. In case of the former type, however, the heavier ends that protruded from the width of the quern were smaller than the overall length of the muller.

The following specimens are described :

(i) Muller, sandstone, long cylindrical with conical top, at base having thick ends with planoconvex section. It is broken. From Period II. Reg. No. 137 (Pl. XLVI, B, on the quern).

(ii) Muller, sandstone, cylindrical with a roughly triangular section. From pit sealed by layer (1). Reg. No. 0773. Not illustrated.

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[1] Sankalia, H. D. and Subbarao, B,; *Excavation at Maheswar and Navdatoli,* (Poona 1958), p. 236.
[2] *Querns and anvils from the Narmada valley,* K. D. Banerjee, *BDCRI,* Vol. XVIII (1957) p. 8-16.
[3] *Ancient India,* No. 20 and 21, Thapar, pp. 105.

d) Stone Balls :

Amongst the stone objects recovered at Satanikota are 40 stone balls. Out of them 15 belong to Period II and the rest to Period III. Of the 40, 26 are perfectly spherical with smooth body, rest 12 are rough and show small fractures and two are broken. In weight they vary from 0.50 gm to 7 gm. Only one specimen from Period II and six from Period III have been illustrated.

Similar stone balls were found from Navdatoli and Maheshwar which were presumed to be weights by Dr. K. D. Banerjee.[1] His contention was followed by the excavators at Chandoli[2] and Nevasa.[3] However, Dr. V. N. Mishra[4] considered these balls as sling-balls. It seems that the large ones were used for animal hunting whereas the smaller ones were ment for bird killing.

The following specimens are illustrated (Pl. XLVIII A, 1-7) :

1. Spherical Stone ball. From Period II, Reg. No. 336.
2. Similar to (1) but it differs in size. From Period III, Reg. No. 838.
3. Similar to (1) but it differs in size. From Period III, Reg. No. 703.
4. Similar to (1) but it differs in size. From Period III, Reg. No. 754.
5. Similar to (1) but it differs in size. From Period III, Reg. No. 346.
6. Similar to (1) but it differs in size. From Period III, Reg. No. 119.
7. Similar to (1) but it differs in size. From Period III, Reg. No. 322.

B. TERRACOTTA OBJECTS :

(a) Human and Animal Figurines.

The excavation yielded only ten figurines, four of human and six of animals. All the human figurines are reported from Period III although one of them—a female head-made by double-mould technique—is a typical Satavahana figurine found from an unstratified level of Period II. The following specimens are illustrated :

Female head cast from a double mould, with its head-dress typical of the Satavahana period tied in the form of crocodile heads on either side *(chudamani makarika)* over the top of the head. From an unstratified level of Period II. (Pl. XLVIII B).

Other Human and animal figurines :

1. Fragment of an animal torso in coarse red ware. From Period II. Reg. No. 41.
2. Ill-baked yaksha figurine, pot-bellied, sitting crossed-legged on a pedestal, *yajnopavita* present, head and hands missing. From Period III. Reg.to. 753

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[1] Sankalia H. D., and others; *From History to Prehistory at Nevasa,* (Poona); p. 240.

[2] Deo, S. B. and Ansari, Z. D., *op. cit.* (1965), p. 136.

[3] Sankalia, Deo, Ansari and Soplrie (1960) *From History to Prehistory at Nevasa,* (1954-56), Poona, 1970, p. 476.

[4] Sankalia, H D.; and others *op. cit.,* (1952-53), p. 332.

3. Head of an animal figurine in coarse red ware with two front legs intact. From Period III. Reg. No. 672.
4. Torso of an animal figurine in coarse red ware. From Period III. Reg. No. 771.
5. A boar with elongated mouth, prominent pinched eyes and fan like ears. Legs and rear portion of the body are missing. From Period III. Reg. No. 42.
6. Fragment of a human figurine, available portion is below abdomen, legs separated in an arch and left foot shown without the details of toes. The modelling shows crude workmanship. From Period III. Reg. No. 645.

(b) Cart Wheels :

Only three cart-wheels were found, all belonging to Period III. They are described below :

1. An irregularly circular wheel with thick hub, bi-convex in outline, centrally perforated, handmade, coarse red fabric. From Period III. Reg. No. 355. (Pl. XLIX, 6).
2. A wheel without hub, bi-convex in section, centrally perforated, handmade, coarse red fabric. From Period III. Reg. No. 364. (Pl. XLIX, 7).
3. A wheel with a thinner body and truncated hubs, coarse red fabric, comparatively large perforation in the centre. From Period III. Reg. No. 566, (Pl. XLIX, 5).

(c) Votive Objects :

Nearly 20 votive objects were encountered in the excavation. Almost all these have depression at the top suggesting their use as votive tanks. The following are described and illustrated (Pl. L).

1. Gourd shaped ill-baked handmade object with a finger depression at the top. From Period II. Reg. No. 827.
2. Miniature pot like object with solid round profile, solid base and shallow depression at the top. From Period III. Reg. No. 896A.

. A small rectangular object with a shallow depression at the top. From Period III. Reg. No. 89 B.

4. A spherical object with flat base decorated with broad finger tip depressions, and a circular shallow depression at the top in the centre. From Period III. Reg. No. 57.
5. A bowl like object with convex sides and flat base. From Period III. Reg. No. 55.
6. A small bowl like object in coarse red ware with cogged-wheel designs on the rim and a knob in the centre, base flat. From Period III. Reg. No. 820.
7. An ill-baked object of coarse grey ware, rim portion decorated with finger-tip design, and a triangular deep depression in the centre. From Period III. Reg. No. 262.

8. Similar to No. 6 but ill-fired and of coarse grey ware. From Period III. Reg. No. 896D.
9. A cylindrical object with flat base and a shallow depression at the top with the body decorated with finger-nail incisions. From Period III. Reg. No. 851.
10. A conical object with finger-tip depressions all over the body. From Period III. Reg. No. 896C.
11. Miniature cup like object. From Period III. Reg. No. 781.
12. Four-facetted cylindrical solid object with incised decoration on its four sides. From Period III. Reg. No. 896G.
13. A cylindrical object, ill-fired, coarse-grey ware, decorated with deep incisions at all the four corners, a deep depression at the apex and flat base. From Period III. Reg. No. 896E.

(d) Lamps : (Pl. LI, 1-3) :

Only three lamps-all complete-were found, one belonging to Period II and the rest to Period III.

1. A lamp circular on plan at base, coarse grey, wheel-made. From Period II. Reg. No. 794.
2. Similar to No. 1 but handmade. From Period III. Reg. No. 896H.
3. Similar to No. 1, but in coarse red and handmade. From Period III. Reg. No. 560.

(e) Crucibles (Pl. LI, 4 and 5) :

Only four fragmentary crucibles were found, two belonging to Period II and two belonging to Period III.

The following are illustrated :

4. Fragment of a crucible, broad mouth, round bottom, small in size, handmade, rim decorated with cogged-wheel design. From Period III. Reg. No. 326.
5. Similar as above but with plain rim. From Period III. Reg. No. 360.

(f) Ear-Ornaments :

In all seven ear-ornaments were found. Three of them belonging to Period II and rest to Period III. The following are illustrated. (Pl LII, 1-6) :

1. Spool-like ear plug with flat profile. From Period II. Reg. No. 836.
2. Spool-like ear plug of red ware with convex profile. From Period II. Reg. No. 800.
3. Ear-ornament having domical ends with a central depression, black-slipped. From Period III. Reg. No. 20.
4. Similar to No. 1. From Period II. Reg. No. 469.
5. Similar to No. 2, but broken. From Period III. Reg. No. 47.

6. Hollow cylindrical ear-ornament of red ware with shallow grooves on the body. From Period III. Reg. No. 97.

(g) Hopscothes (Pl. XLIX, 1-2) :

Only two hopscotches fashioned from pot sherds both belonging to Period III were found. They are described below :

1. Hopscotch made of black-slipped ware. From Period III. Reg. No. 790.
2. Hopscotch, made of red-slipped ware. From Period III. Reg. No. 825.

(h) Spindle-whorls (Pl. XLIX, 3-4) :

Only two spindle-whorls were found, one from Period II and other from Period III.

1. Spindle-whorl, half-broken, made of grey ware. From Period III. Reg. No. 159.
2. Spindle Whorl, made of red slipped ware. From Period II. Reg. No. 855.

(i) Playthings

A hoard of 42 animal figurines and some votive objects were found from Period III. The animal figurines included bull, horse, elephant, etc. Besides, some fragmentary pieces were also found in the same hoard.

Only three representative figurines of the hoard are illustrated besides other playthings (Pl. LIII, 1-4 and Pl. LIV, 5, 6,) :

1. An elephant, short-turnk and ear represented by pinching the clay, tail absent, crude, handmade, ill-baked. From Period III. Reg. No. 896K.
2. A bull with prominent hump, long mouth, tail and two legs broken, handmade, crude, ill-baked. From Period III. Reg. No. 896L.
3. A horse—crude, handmade, ears, mouth and tail shown by pinching the clay, ill-baked. From Period III. Reg. No. 986J.
4. Gamesman, in shape of the head of a ram. From Period III. Reg. No. 64.
5. A hopscotch like fragmentary object, perforated prominently and perfectly at the centre. From Period II. Reg. No. 300.
6. Similar to No. 5. From Period III. Reg. No. 417.
7. A marble, ill fired, hemispherical. From Period III. Reg. No. 720.

(j) Miscellaneous : (Pl. LIV, 1-4, and 8) :

1. Triangular fragment of a rectangular object of indeterminate use with a ridge at one end, handmade. From Period III. Reg. No. 851.
2. A decorated object of indeterminate use. From Period III. Reg. No. 900.
3. A conical object of indeterminate use, with an iron nail inserted into it. From Period II. Reg. No. 3 .
4. A conical piece with a flat base and tapering pointed top. From Period III. Reg. No. 830.
5. A stopper-like object with a circular depression on the flat surface. From pit sealed by (1). Reg. No. 684.

C. METAL OBJECTS

(a) Iron Objects :

In all 230 iron objects were recovered from the excavation at Satanikota. They are distributed as follows :

Period I	—	Nil
Period II	—	88
Period III	—	142

This data shows how iron became more popular gradually in this region. Besides, another remarkable feature is that 14 specimens of iron slags were found, one from Period II and rest from Period III. Presence of iron slags in subsequent layers indicates towards a local industry of iron in this region.

It has been noticed that the offensive weapons were negligible in numbers, as only three spear-heads and one dagger were found.

In agricultural implements, only two sickles were found.

Objects of structural and domestic use were found in a large number, i.e. nails —90, rings—3, door-knobs—2 and other miscellaneous objects like crucible, etc. are 110.

The following are illustrated : (Pl. LV)

1. Nail of squarish section with folded head. From Period III. Reg. No. 251.
2. Clamp with a central circular rod and spread heads at both ends. From Period III. Reg. No. 48.
3. A complete blade of a knife with rectangular section, tang broken. From Period II. Reg. No. 680.
4. Staple. From Period III. Reg. No. 340.
5. A comple blade of a knife with triangular section and a long tang. From Period Period III. Reg. No. 327.
6. Door-rings, sticking due to corrossion. From Period III. Reg. No. 901.
7. Door-ring. From Period III. Reg. No. 692.
8. Door-ring. From Period III. Reg. No. 53.

(Pl. LVI) :

1. A dagger or knife with a bi-convex section. From Period II. Reg. No. 675.
2. Spear-head with a flat section. From Period II. Reg. No. 678.
3. Spear-head, tanged, with a flattened section. From Period II. Reg. No. 899.
4. Nail parer. From Period II. Reg. No. 185.
5. Spear-head, tanged, with a flat section. From Period III. Reg. No. 567.
6. A clamp. From earliest level of Period II. Reg. No. 284.
7. A borer of round section. From Period II. Reg. No. 612.
8. Object of indeterminate use. From Period II. Reg. No. 15 .
9. A chisel with rectangular section. From Period II. Reg. No. 839.

10. Door-ring. From Period II. Reg. No. 413.
11. Nail of squarish section with knob-head. From Period II. Reg. No. 446.
12. Nail of squarish section with a flat hook-head. From Period II. Reg. No. 843(A).
13. Similar to (11). From Period II. Reg. No. 843(B).
14. Similar to (11). From Period II. Reg. No. 747.
15. Ferrule. From surface near gateway complex. Reg. No. 906 (Not illustrated).

(b) Copper Objects (Pl. LVII) :

Altogether 27 objects were recovered from the excavation; except the coins. Their distribution is as follows :

Period I	—	Nil
Period II	—	1
Period III	—	20
Pit	—	3
Surface	—	3

The selected examples are listed below :

1. Copper bangle piece of round section, D-shaped. From Period III. Reg. No. 788.
2. Copper bangle piece of elliptical section. From Period III. Reg. No. 161.
3. Similar to (2). From Period III. Reg. No. 14.
4. Similar to (2). From Period III. Reg. No. 521.
5. Bangle of rectangular section decorated with three ridges surrounded by two dotted-lines on either side. From Period III. Reg. No. 600.
6. Rig with elliptical section. From Period III. Reg. No. 586.
7. Ring with circular section, highly corroded. From pit sealed by layer (1).
8. Ring with flattish section, and decorated with circular depression over the periphery. From Period III. Reg. No. 183.
9. *Nathani* (Nose-ornament). From a pit sealed by layer (1). Reg. No. 523.
10. Similar to (9). From Period III. Reg. No. 741.
11. Ring, hollow, convex in section. From Period III. Reg. No. 169.
12. Ring of rectangular section. From pit sealed by layer (1). Reg. No. 538.

D. BONE AND IVORY OBJECTS

Only 5 bone-points were found in the excavation in which 4 belong to Period II and one is from a soak-pit. None of them is complete. The technique of manufacturing these involved the flaking off a bone to a required shape. This is evident from some specimens showing flake scars. These pieces show attempts of smoothening, sharpening and polishing the surface of the objects. They are also reported from sites like Tripuri,[1] Nasik[2], etc.

[1] M. G. Dikshit, *Tripuri,* 1952, p. 192.
[2] Sankalia and Deo, *Excavation at Nasik,* p. 121.

In association with these bone points, metals like iron and copper, etc. have been found at Satanikota and at various other sites also. So, the use of bone in this Early Historic Period may be due to rarity and high cost of metals or materials other than bone.

As far as their use is concerned, it is most probable that they were used as arrow-heads. This theory is further supported by Childe[1] who says that at Nichelsberg these bone-points were found in association with two bows made of yew. These bone points have been called arrow heads by Marshall[2] also. Kautilya[3] also mentions arrow-heads, made of bone.

As regards other bone objects, two specimens of stylus, one chisel like object and a few objects of indeterminate use were encountered in the excavation.

Regarding the ivory objects, the site yielded a very negligible number of objects.

The following specimens are illustrated (Pl. LVIII) :

1. Bone-point with both ends broken. Traces of chipping are prominently seen, polished. From earliest level of Period II. Reg. No. 129.
2. Similar to No. 1. From Period II. Reg. No. 482A.
3. Similar to above. From Period II. Reg. No. 482B.
4. Similar to above. From Period II. Reg. No. 366.
5. Bone, stylus, both the points broken, showing polished surface, highly corroded. From a pit sealed by layer (1 . Reg. No. 664.
6. Similar to No. 1. From soakage pit. Reg. No. 907.
7. Ivory, A cylindrical piece having incised groove as decoration at both the ends; probably a handle (?) From a pit sealed by layer (1). Reg. No. 488.
8. A chisel-like flat piece of bone with a cutting edge. The other end is thick, heavy and rough. From a pit sealed by layer (1). Reg. No. 667.
9. A fragment of a small bone object of indeterminate use. From Period II. Reg. No. 416.
10. A fragment of a rectangular bone piece of indeterminate use. From Period II. Reg. No. 307.

Fragment of an ivory handle (?) From Period II. Reg. No. 310.

E. BANGLES AND RINGS :

A total of 414 bangle fragments mostly of shell and glass were recovered from the excavation. Other materials are ivory (2 specimens) and copper (5 specimens).

Of the 212 shell-bangles recovered from the excavation, 38 came from Period II, 123 from Period III and 51 from pit (sealed by layer No. 1). Two sawn and one complete conch shells have also been found, denoting a local, rather than an imported industry.

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[1] Child, V. G., *Danube in Prehistory* (1929), p. 179.

[2] Marshall, J., *Taxila,* Vol. II, p. 664.

[3] *Kautilya's Arthashastra,* Ed. G. Shastri, Vol. I, p. 253.

It may be noted that being sawn out of a conch shell, the bangles are not perfectly circular in shape. Decorated bangles are very few in number in comparison tothe plain ones, only 5 decorated specimens were found from Period II and 5 from Period III. The decoration which is given essentially on the outer surface, sometimes also overlapping to the sides, do not show a wide range of patterns. The commonest pattern is the square or rectangular bottom in bold relief carved on the part of the circumference which shows an inward bend or projection due to the structural feature of the conch shell. Other design includes cut-mark at regular intervals. Another patent method was to have a central board groove on the outer surface which was utilised to fix a gold leaf as decoration. Fragments of similar shell bangles with gold leaf sticking to them were found in layer 6 of trench II of M H S R.[1] The observation is further confirmed by similar bangles with pieces of gold-leaf still sticking to it in the recent excavations at Nevasa[2]. Even now, Rajasthani women use such bangles which show that this mode of decorating shell bangles has a long survival.

Some of the pieces have turned black due to contact with fire, which do not seem to be intentional.

Of the 196 glass bangles 54 came from Period III, 28 from Period II and 114 from pit sealed by layer (1). Only nine polychrome bangles were found, in which one was from Period III and rest from the pit sealed by layer (1). Tab Green bangles are absent in Period II and only 9 specimens have been found from Period III and 18 from pits.

Only seven pieces of blue glass bangles were found, two from Period II and 5 from Period III. Only 4 fragments of white glass bangles were found from Period II and 10 pits. White glass bangles are absent in Period III, only two pieces in red colour have been found and both from the pit. The black colour is the most common colour at the site, as 137 specimens are found in all, 21 from Period II, 39 from Period III and rest 77 from pits.

In black glass, the technique of making seems to have involved the pulling out of plastic glass to the requisite shape. Most of the black glass bangles show smooth surfaces but uneven outlines. In the other different coloured specimens, the features show as if they were pressed in a mould.

Most of the monochrome pieces are devoid of any decoration in as much as they present a plain monotonous bulk.

In all cases the bangles were fragmentary. From the available pieces, it seems that bangles were produced both for adults and children.

The excavations also yielded 9 rings of copper, 4 of glass, 6 of shell and one of gold.

Two glass rings belong to Period II and two specimens were collected from pit. rings are similar to ordinary modern rings with usual circular section except one, which has been decorated with cut-marks at regular intervals.

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[1] Sankalia, Subbarao and Deo, *op. cit.*, (Poona), 1952-53, p. 229.

[2] Sankalia H. D.; and others, *From History to Prehistory at Nevasa,* (Poona)., p. 459.

Two of the shell rings are from Period II, three from Period III and one from pit. These shell rings are either rectangular or plano-convex in section. In place of a bezel there have been provided a small oval shaped platform in one specimen and another seems to be pentagonal in shape.

The gold ring is hollow from inside and bears a lapis-lazuli bezel. This gold ring was found from a pit sealed by layer (1).

The following specimens are described and illustrated : (Fig. 45, Pl. LIX).

1. Fragment of a glass bangle, opaque, plano-convex section, bi-chrome, decorated on apex with chocolate-coloured beads on yellow back-ground. From Period III. Reg. No. 456. (Fig. 45, 14).
2. Fragment of polychrome glass bangle, opaque, plano-convex section decorated with pattern consisting two light blue strips on either side at the bottom, chocolate stripes on yellow, one each on both sides, chocolate coloured buttoms in a row at the apex which are further decorated with white beads. From Period III. Reg. No. 350 (Fig. 45, 15).
3. Fragment of a polychrome glass bangles, with two yellow bands on green back-ground on either side and leaf design at the apex. From Period III. Reg. No. 430. (Fig. 45, 7).
4. Fragment of a shell bangle, rectangular in section and showing roughly rectangular button in the saddle of the circumference. From Period III. Reg. No. 380. (Fig. 45, 10).
5. Fragment of a poly chrome glass bangle, almost triangular in section, decorated with concentric rings in chocolate and green colour, with rope-design in black and white on either side, apex decorated with yellow beads on chocolate back-ground. From Period III. Reg. No. 337. (Fig. 45, 9).
6. Similar to (3) but smaller in size. From Period III. Reg. No. 309A (Fig. 45, 6).
7. Fragment of light blue glass bangle, opaque, circular section. From Period III. Reg. No. 654A. (Fig. 45, 3).
8. Similar to (7) white in colour. From Period III. Reg. No. 309B. (Fig. 45, 1).
9. Fragment of a shell bangle, rectangular section, decorated with incision marks. From Period III. Reg. No. 580. (Fig. 45, 4).
10. Fragment of a shell bangle channelled section, it could have been also used as a bracelet. From Period III. Reg. No. 654B. (Fig. 45, 5).
11. Fragment of a glass bangle, opaque, black in colour, plano-convex section. From Period III. Reg. No. 433. (Fig. 45, 12).
12. Similar to (11) but larger in size. From Period III. Reg. No. 393. (Fig. 45, 8).
13. A gold ring with a blue bezel of lapis-lazuli. From Period III. Reg. No. 769. (Fig. 45, 13).
14. Fragment of a pale brown glass ring with shallow grooves and vertical corruga-tions across the curvature. From Period III. Reg. No. 577 (Fig. 45, 13).

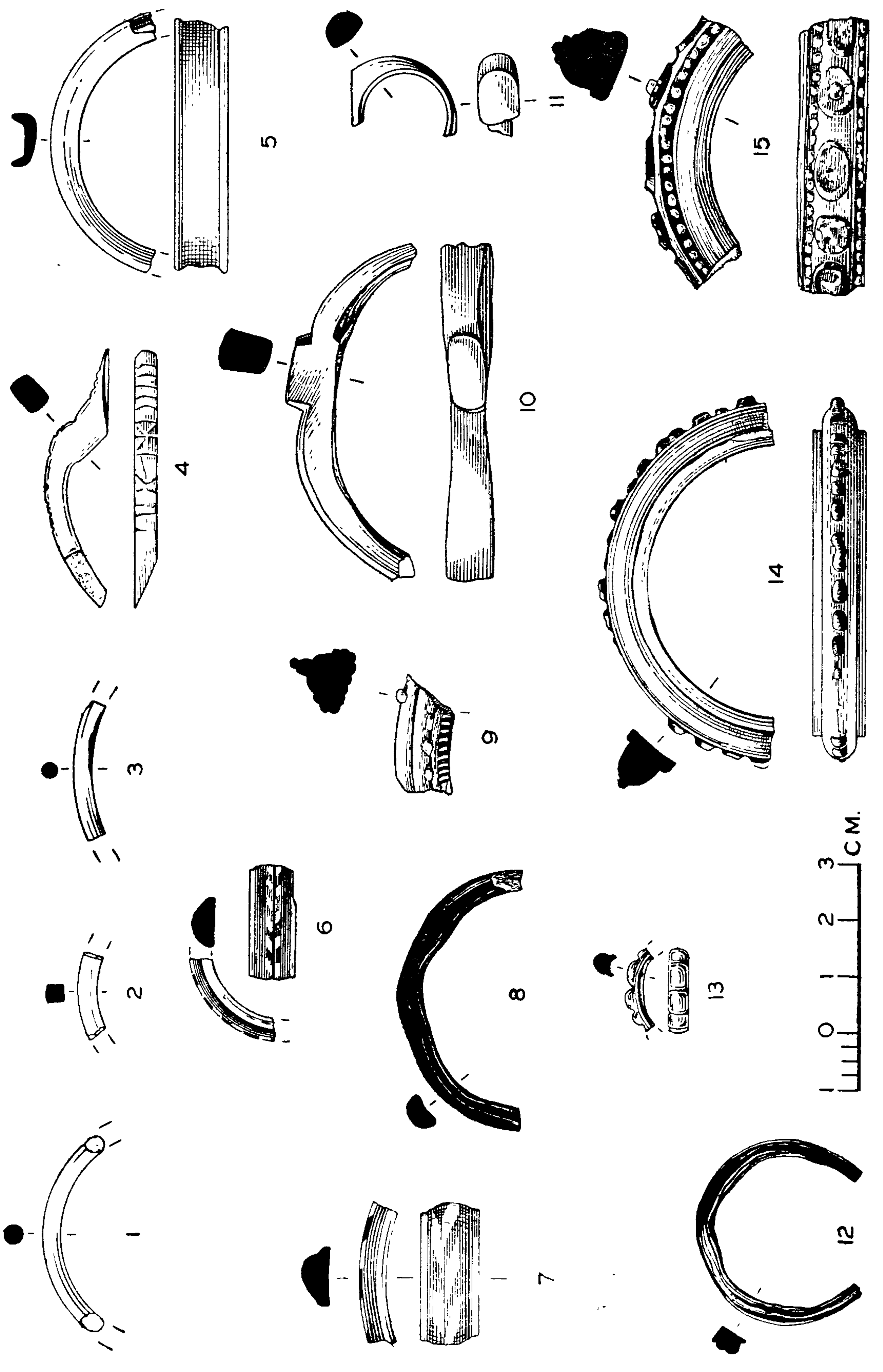

FIG. 45

15. Fragment of a shell ring, plano-convex section. From Period III. Reg. No. 739. (Fig. 45, 11).

F. BEADS

In all 199 beads were discovered from Satanikota. A variety of materials were employed for the manufacture of the excavated collection. As many as six to seven different materials contributed to the Satanikota beads. The following table shows the distribution, material-wise :

Table Showing Period Distribution of Beads Obtained at Satanikota

Classified Accordidg to Their Material :

Material	Period II	Period III	Surface	Un-stratified	Total	Percentage
1. Terracotta	22	23	2	2	49	24·62
2. Glass	67	33	2	Nil	102	51·25
3. Shell	8	10	1	Nil	19	9·54
4. Jasper	4	5	2	Nil	11	5·53
5. Agate	1	6	1	Nil	8	4·03
6. Carnelian	2	6	Nil	Nil	8	4·03
7. Indeterminate	1	Nil	Nil	Nil	1	0·50
8. Chert	Nil	1	Nil	Nil	1	0·50
Total	105	84	8	2	199	
Percentage	52·77	42·21	4·02	1·00		

The above table shows that out of 199 beads only 10 were either unstratified or picked from surface. The material-wise distribution shows that the percentage of glass was highest (51·25%) followed by terracotta (24·62%), shell (9·54%), jasper (5·53%), agate (4·03%) and carnelian (4·03%) etc. respectively. Period II yielded 105 beads whereas Period III yielded 84 beads representing 52·77% and 42·21% respectively of the total yield. In both the periods the other materials used for making beads were equally popular as far as the number of beads, from each period individually indicates, except glass, which is more popular in Period II. The other exception is agate which is represented by one specimen only in Period II. In Period III it is represented by 6 specimens only. So far the semi-precious stone beads are concerned, they are more in number in Period III in comparison to Period II. These beads were imported from outside—the nearest place for their importation may be Cambay.[1] The fact is corroborated by the absence of unfinished beads or glass-lumps or large cores of these stones. The represented shapes

[1] *Bombay Gazetteer,* Vol. VI, pp. 11-12.

(refer tables below) include barrel, circular, cylinder circular, lug collar, globular, spherical, spacer, bicone and segmented, etc. and there are also pendants including an animal-amulet. Some of these principal shapes have been further devided into sub-varieties on the basis of their length and transverse section. Apart from the arecanut or pear shapes, available in terracotta only, the other popular shapes were the long barrel circular, the long cylinder circular and globular, etc.

The materials, together with the range of shapes, are dealt with below :

(1) Terracotta :

Terracotta is represented by 49 beads in all out of which 45 are from stratified context. One noteworthy point in this collection is the absence of plano-convex shaped beads in Period III. In Period II this shape is represented by 7 specimens and one is unstratified.

The collection represents as many as 8 different geometrical shapes. Most of these beads are in coarse red or black except 4 which are black slipped.

Typological add Periodwise Distribution of Terracotta Beads/Pendants

Shape	Period II	Period III	Surface	Unstratified	Total
1. Arecanut	6	8	1	1	16
2. Bicone	3	10	Nil	Nil	13
3. Plano-convex	7	Nil	Nil	1	8
4. Convex-base conical body	1	1	1	Nil	3
5. Long barrel circular	1	2	Nil	Nil	3
6.i Conical pendants	2	1	Nil	Nil	3
7. Globular	1	1	Nil	Nil	2
8. Concave base conical body	1	Nil	Nil	Nil	1
Total	22	23	2	2	49

The following are illustrated : (Fig. 46; Pl. LX):

1. Conical pendant with flat bottom, coarse red, Period II. Reg. No. 799.
2. Conical pendant with flat bottom, coarse red, Period III. Reg. No. 847.
3. Plano-convex, circular, coarse red, Period II, Reg. No. 191.
4. Similar to No. 3, coarse red, Period II, Reg. No. 484.
5. Plano-convex, circular, grey, Period II. Reg. No. 214.
6. Similar to 5. Period II. Reg. No. 483.
7. Similar to 5. Period II. Reg. No. 218.
8. Arecanut shaped, coarse red. Period III. Reg. No. 70.
9. Similar to 5. Unstratified, Reg. No. 857.
10. Concave base, conical body, coarse black, Period II. Reg. No. 515.

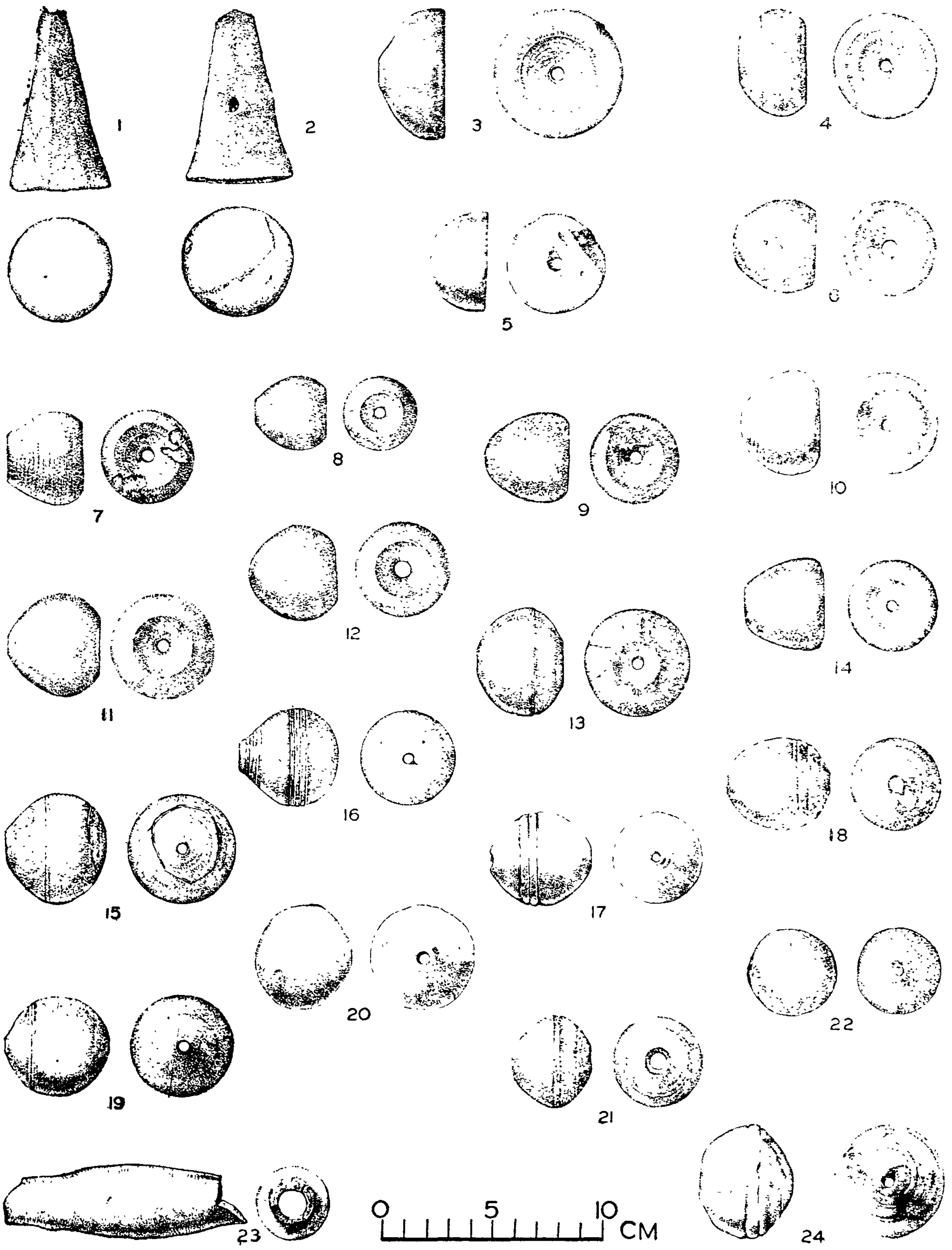

FIG. 46

11. Similar to No. 8. Period III. Reg. No. 108.
12. Arecanut shaped, coarse red, Period III. Reg. No. 277.
13. Bicone, coarse red, Period III. Reg. No. 529.
14. Plano-convex, coarse red, Period III. Reg. No. 148.
15. Bicone, deep concentric grooved at shoulder and bottom, respectively, coarse black, Period III. Reg. No. 789.
16. Convex base, conical body and collared, decorated with concentric circles at neck and belly portion, Surface. Reg. No. 829.
17. Bicone, decorated with concentric circles at the shoulder, coarse red, Period III. Reg. No. 290.
18. Convex base, conical body, grooves below belly, Period III. Reg. No. 338.
19. Bicone, decorated with concentric circle at the shoulder, black slipped, Period III. Reg. No. 495.
20. Globular, carelessly executed, coarse red, Period II. Reg. No. 821.
21. Similar to 12, decorated with concentric circle at belly and near bottom, coarse red, Period II. Reg. No. 735.
22. Globular, carelessly executed. Coarse black, Period III. Reg. No. 74.
23. Long barrel circular, coarse black, Period III. Reg. No. 863.
24. Bicone, decorated with concentric circles at the neck and belly portion, coarse black, Period III. Reg. No. 528.
25. Bicone, ill baked, carelessly executed, broken, coarse red, Period II. Reg. No. 837. Not illustrated.

(2) Glass :

Glass was the material represented by 102 beads. A variety of coloured glass was evidenced and the manufacture of the beads displayed different techniques. Glass was

Typological and Periodwise Distribution of Glass Beads

Shape	Period II	Period III	Surface	Unstratified	Total
1. Short cylinder circular	34	10	1	Nil	45
2. Long barrel circular	3	3	Nil	Nil	6
3. Short barrel circular	2	3	Nil	1	6
4. Lug collared	3	Nil	Nil	Nil	3
5. Spherical	2	Nil	1	Nil	3
6. Segmented	2	Nil	Nil	Nil	2
7. Bicone	18	14	Nil	Nil	32
8. Barrel ends	1	1	Nil	Nil	2
9. Convex barrel circular	Nil	1	Nil	Nil	1
10. Elliptical eircular	1	Nil	Nil	Nil	1
11. Cogged wheel shaped	1	Nil	Nil	Nil	1
Total	67	32	2	1	102

more popular as a material for bead making in Period II as is evidenced by almost double the number of beads occurring in Period II, than from Period III. The colours represented are blue, black, green, yellow and orange. A common colour like red is completely absent.

In all, the micro-beads were 68 in number. They were represented in two shapes only, viz. short cylinder circular and bicone. None is illustrated. But one point is remarkable about them that unlike Brahmapuri,[1] here at Satanikota, they seem to be more popular in Period II than Period III.

Three beads with lug-collars from Period II are datable. Beads of this shape have been found in India at several sites with a date ranging from about A.D. 100 to A.D. 350 From the large number of specimens now known from stratified excavations their general dating, as given above, appears to be fairly certain. At Kondapur[2] this shape of beads was repeated in almost all the materials available. Dikshit[3] regards it is a "general feature common for the Andhra Age, and the type seems to be very popular in the 2nd cent. A.D. throughout India." Some of the other sites where they have been found belonging to 1st cent. B.C. to 2nd cent. A.D. are Bhokardan,[4] Ahichhatra[5] and Tripuri.[6]

Another datable glass bead is with yellow matrix and a green coating outside. At Brahmapuri[7] they have been found from Bahamani levels. At Satanikota also they are restricted to Period III only.

(3) Shell :

18 beads and a turtle-pendant of shell were recovered, of which 2 beads were collected from the surface. They have been represented in following five shapes.

Typological and Periodwise Distribution of Shell-Beads/Pendants

Shape	Period II	Period III	Surface	Unstratified	Total
1. Short Barrel circular	5	8	Nil	Nil	13
2. Spherical	2	1	Nil	Nil	3
3. Long Barrel circular	Nil	1	Nil	Nil	1
4. Bicone	Nil	Nil	1	Nil	1
5. Turtle shaped	1	Nil	Nil	Nil	1
Total	8	10	1	Nil	19

[1] Dikshit, M. G., *Excavation at Brahmapuri* 1954-56 (Kolhapur 1952), p. 99.
[2] Dikshit, M. G., *Beads from Kondapur,* (Hydrabad, 1952), p. 2.
[3] *Ibid.*
[4] Deo, S. B., *Excavation at Bhokardan,* Nagpur: (Aurangabad, 1974). Fig. 24, No. 139.
[5] Dikshit, M-G., 'Beads from Ahichhatra, *Ancient India,* No. 8, Pl. XIV, No. 112,
[6] Dikshit, M.G., *Tripuri*—1952, fig. 36, No. 30.
[7] Dikshit, M. G., *Excavation at Brahmapuri* (Poona, 1952), p. 104.

The turtle-shaped pendant found from the Satavahana level is considered to be a datable shape. In India such pendants/amulets have a very ancient tradition. Its earliest specimen in shell was found at Prakash[1] in Maharashtra during the excavation in 1954-55. The date given to this specimen is 1st millennium B.C. But, normally they are believed to belong to the early centuries of the Christian era, and it is assumed that they went out of fashion after 3rd cent. A.D. At Taxila[2] two such pendants in garnet and mother-o-pearl respectively were found belonging to 1st cent B.C. Four other amulets, two in faience, one in quartz and one in malachite, also have been reported from Taxila,[3] all belonging to 1st cent. A.D.

From Kaundinyapura[4] also a similar pendant was recovered from the Satavahana level. From Kosam, Ter, Nevasa, etc. also identical pendants have been found, which, however, have not been unpublished. Another example is from Bhokardan[5] where two such specimens were found belonging to 3rd cent. A.D.

(4) Jasper :

Eleven jasper beads—ten of red and one of green colour-were recovered. The latter was represented by a globular bead and other main shapes are barrel with lug-collar and short cylinder-circulr, etc.

Typological and Periodwise Distribution of Jasper Beads :

Shape	Period II	Period III	Surface	Unstratified	Total
1. Short cylinder-circular	3	3	2	Nil	8
2. Spherical	Nil	1	Nil	Nil	1
3. Short barrel-circular	Nil	1	Nil	Nil	1
4. Barrel with lug-collar	1	Nil	Nil	Nil	1
Total	4	5	2	Nil	11

A barrel with lug-collar bead is of special interest as it has also a datable value. Here, at Satanikota, it was found from Satavahana level (Period II). Similar shapes in glass were also found which have been already discussed in detail above.

(5) Agate :

In all, 8 agate beads were found. One remarkable point is that this particular material is represent by only one specimen in Period II. Two specimens were collected from surface.

[1] Dikshit, M. G., *Excavation at Kaundinyapura* (Bombay, 1964), p. 97.
[2] Beck, H. C., Beads from Taxila, *Mem. Arch. Survey Indi.* no. 65, (Delhi, 1941), Pl. VII, 25 and 26.
[3] Beck, H. C., *Ibid,* Pl. VIII, 22 and 23.
[4] Dikshit, M. G., *op. cit.,* (1964), p. 96.
[5] Deo, S. B., *op. cit.,* (1974), Fig. 24, No. 144, 145.

Typological and Periodwise Distribution of Agate Beads :

Shape	Period II	Period III	Surface	Unstratified	Total
1. Spherical	Nil	3	Nil	Nil	3
2. Long Barrel-circular	Nil	2	1	Nil	3
3. Circular tabular	1	Nil	Nil	Nil	1
4. Spacer	Nil	1	Nil	Nil	1
Total	1	6	1	Nil	8

A tubular bead which was found from Satavahana level (Period II) needs special mention. At Taxila[1] the earliest bead of this shape is dated to the 1st cent. B.C. A bead, similar in shape and material was found from Ahichhatra[2] belonging to 1st cent. A.D. From Kondapur[3] also, a bead similar in shape was found. It was called "South Indian Type" by Dikshit.[4] Another similar example was found from Maski[5] also belonging to 1st cent. A.D.—3rd cent. A.D.

(6) Carnelian :

Carnelian was represented by eight beads only, in which 6 came from Period III and 2 from Period II.

Typological and Periodwise Distribution of Carnelian Beads :

Shape	Period II	Period III	Surface	Unstratified	Total
1. Short Barrel-cylinder	2	2	Nil	Nil	4
2. Spherical	Nil	2	Nil	Nil	2
3. Long cylinder-Hexagonal	Nil	1	Nil	Nil	1
4. Long Truncated-bicone-Hexagonal	Nil	1	Nil	Nil	1
Total	2	6	Nil	Nil	8

(7) Indeterminate material :

One bead of indeterminate material was found from period II.

The following beads are described and illustrated (Fig. 47; Pl. LXI), Serial nos. of the description, the fig. and the plate are indentical.

1. Spherical, irregular in outline, green jasper, period III. Reg. No. 766.

[1] Beck, H. C, *op. cit.*, (1941), Pl. IV, 38.
[2] Dikshit, M. G., 'Beads from Ahichhatra', *Ancient India,* No. 8, fig. 2, No. 45.
[3] Dikshit, M. G., *Some beads from Kondapur,* p. 9, Pl. I, 38.
[4] *Ibid.,*
[5] *Ancient India,* No. 13, Pl. XXVII, No. 32.

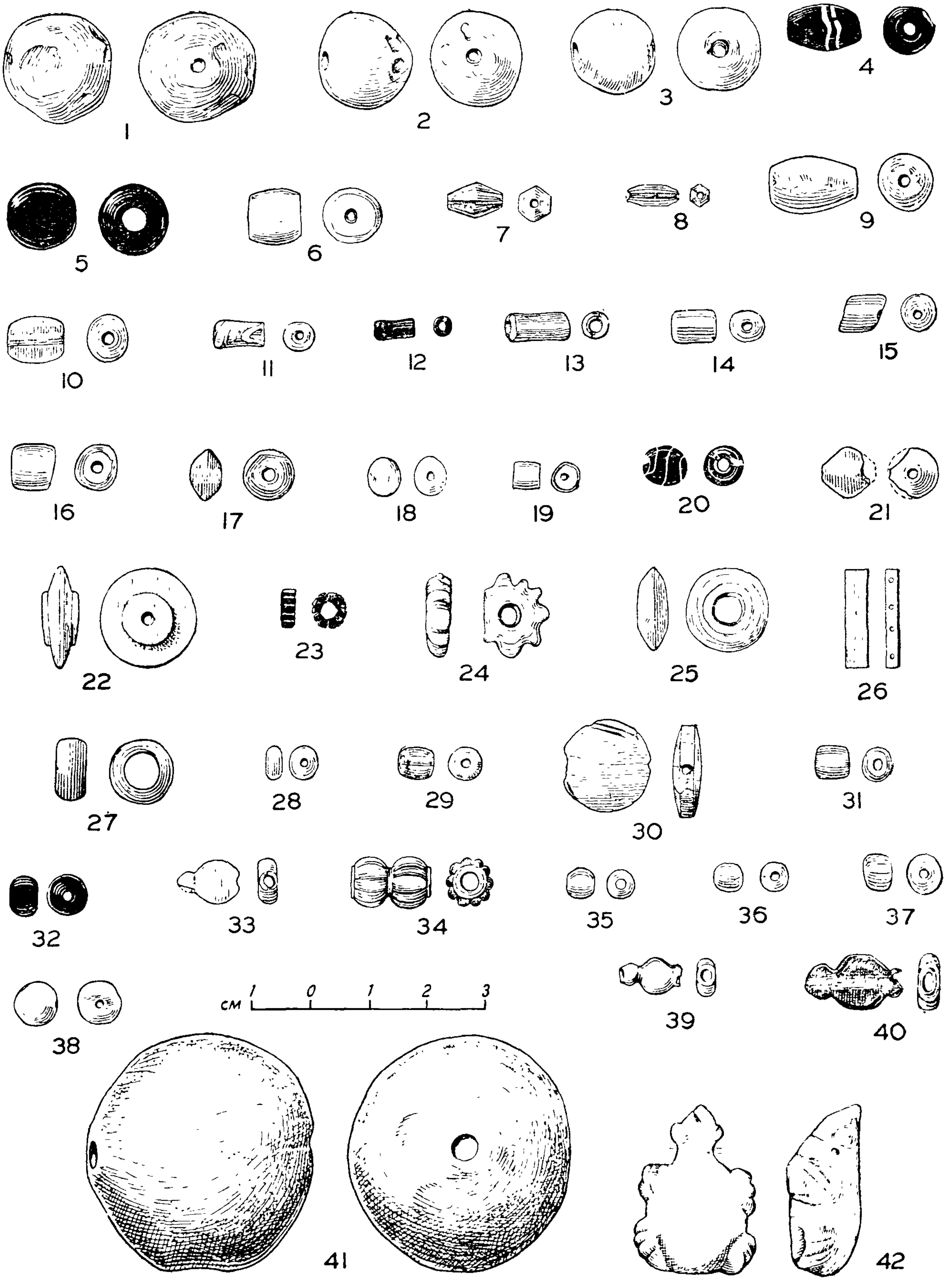
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FIG. 47

2. Spherical irregular in outline, shell, period II. Reg. No. 708.
3. Spherical, shell, Period II, Reg. No. 710.
4. Long barrel-circular, banded agate, surface, Reg. No. 2.
5. Spherical, well polished, raven-black, glass, Period II. Reg. No. 507.
6. Short barrel circular, Unstratified, shell, Reg. No. 856.
7. Long truncated bicone, hexagonal, carnelian, Period III. Reg. No. 499.
8. Long cylindrical, hexagonal, carnelian, Period III. Reg. No. 768.
9. Long barrel-circular, carnelian, Period II Reg. No. 732.
10. Short barrel-circular, carnelian, Period II. Reg. No. 704.
11. Long cylindrical, yellow glass, Period III. Reg. No. 394.
12. Long cylindrical, black glass, Period II. Reg. No. 642.
13. Long cylindrical, green glass, Period III. Reg. No. 762.
14. Short cylindrical, red jasper, Period III. Reg. No. 546.
15. Short cylindrical skyblue glass, Period III. Reg. No. 819.
16. Short cylindrical, yellow matrix with green coating, green glass, Period III. Reg. No. 663.
17. Bicone circular, olive green glass, Period III. Reg. No. 45.
18. Spherical, yellow glass, surface, Reg. No. 740.
19. Short barrel circular, shell, Period III. Reg. No. 648.
20. Barrel-shaped with white spiral band, black glass, Period III. Reg. No. 535.
21. Bicone-circular, pale green glass, Period III. Reg. No. 553.
22. Bi-cone circular with hub (wheel-shaped) shell, surface, Reg. No. 898.
23. Short cylindrical with indentation all around, of indeterminate material, Period II. Reg. No. 86.
24. Cog-shaped, yellow glass, Period II. Reg. No. 411.
25. Bicone circular, yellow glass, Period II, Reg. No. 614.
26. Spacer, agate, Period III. Reg. No. 606.
27. Short cylinder circular with a comparatively bigger perforation, blue glass, surface, Reg. No. 715.
28. Short cylinder circular, red Jasper, Period II. Reg. No. 476.
29. Short barrel circular, transparent, light orange glass, Period II. Reg. No. 226.
30. Circular tabular, agate, Period II. Reg. No. 646.
31. Similar to 16, green glass, Period III, Reg. No. 858.
32. Short barrel, circular, raven black glass, with highly polished surface, Period III. Reg. No. 459.
33. Barrel with lug collar, lenticular, red jasper, Period II. Reg. No. 629.
34. Segmented, blue glass, Period II. Reg. No. 701.
35. Spherical, yellow glass, surface, Reg. No. 740.
36. Spherical, pale-red jasper, Period III Reg. No. 90.
37. Short cylinder-circular, light blue glass, Period III. Reg. No. 595.
38. Spherical, shell, Period III. Reg. No. 659.
39. Barrel with lug-collar, lenticular, yellow glass, Period II. Reg. No. 505.

40. Barrel with lug collar, lenticular, blue glass, Period II, Reg. No. 486.
41. Spherical, large sized, chert, Period III. Reg. No. 685. (Not included in the plate).
42. Turtle-pendant, shell, period II. Reg. No. 721.

C. COINS.

Satanikota yielded only 5 coins—2 lead and 3 copper. Of these only the lead coins, one from the 'Village Mound' and the other from the 'High Ground', belonging to the Satavahanas were encountered in the course of excavation in the stratified layers while the other three copper coins belonging to the Muslim kings of the Medieval Period were picked up from the surface.

Although the 'Village Mound' yielded only one lead coin, Reg. No. 106 (Pl. LXII, 1), it is one of the most significant finds the site revealed. It came from the early levels of Period II within the ancient fortified settlement in association with the diagnostic pottery and antiquities such as Black-and-Red Ware, Russet-Coated Painted Ware, red ware and Red Polished Ware and double mould-made terracotta female figurine, typical beads, tiles with double perforations, etc.

This unique lead coin is roughly circular in shape with a diameter ranging from 2·3 cm to 2·5 cm. It weighs 7·773 gm or 120 grains. The coin is in an excellent state of preservation, though, as will be seen from the following description, full or parts of some of the letters and devices on the obverse have gone out of flan and give rise to some difficulty in the full restoration of the legend. This is due to the fact that the die was much larger than the metallic flan. The coin (Pl. LXII, 1), may be described as follows :

Obverse : In the middle on the left, a *triratna* with a smaller circle within another larger circle pellets around it, on right three slightly curved vertical lines, the middle one being somewhat longer than the two flanking lines; a crescent slightly above but separated from the upper right limb of the *triratna*. The top horizontal stroke of the left limb of the *triratna* is somewhat broader than that of its right limb Above, the right half of the *triratna* a *vamavarta* (anti-clockwise) svastika, instead of the usual *dakshinavarta* svastika (clockwise) to its right lower portion of taurine or nandipada. Legend in early Brahmi characters to the right of the two last mentioned devices beginning at about 2 O'clock may be read as *Kumarasa sira-Sata*.

Reverse : A square divided into two zones by a horizontal line running across it, the upper one being almost twice the size as compared to the lower one. In the upper zone, there is a tree with artistically designed cursive trunk and branches and leaves and fruits represented in the form of pellets. The lower rectangle depicts a wavy line symbolising river and some aquatic creatures.

The coin is undoubtedly die struck. On the obverse the incuse mark is clear from about 10 O'clock to about 6 O'clock. It must have run across the entire periphery, but

for the fact that the metal blank was smaller than the die. On the reverse, the left side of the square frame from top to bottom has remained off the flan while the right side is almost fully accommodated. The lower portion of the frame has also remained unaccommodated. This also is due to the smallness of the flan and lack of necessary care on the part of the person responsible for striking the die.

Of the obverse devices, only the lower portion of the *nandipada* has been accommodated. But on a careful examination of the coin, the portions of the curved lines or a semicircle rising from the upper portion of the circle can be seen quite clearly. Initially one may be tempted to read it as *ma,* but this letter has no place in the legend as reading it as *ma* would not enable as to get sense out of the legend. It appears that the two symbols on the top, i.e. svastika and *nandipada,* marked the termination and beginning respectively of the legend which seems to have commenced immediately after the *nandipada.* There is no difficulty in reading the first four letters of the legend, i.e. *Kumarasa* as each one of them together with the medial signs is fully accommodated on the coin. The next letter may be read as if though it was engraved in the die in a rather peculiar manner and the shape of the letter *s* does not exactly agree with the same letter at the end of the word *Kumarasa.* The next letter is undoubtedly *ra* and was intended for *ri,* the medial sign for *i* having gone off the flan. The complete word is thus intended for *siri.* Next to it we see the lower portion of the letters *sa* and *ta.* Following the usual practice the legend must have ended in the genitive singular so that the concluding letter after *ta* must have been *sa.* As the die-cutter did not succeed in accommodating this letter before the svastika, he must have engraved it above the svastika, but it is not accommodated on the coin. The last word, therefore, may be restored as *satasa.* The entire legend was thus in all probability *Kumarasa siri Satasa.* Alternatively it may be suggested that the legend began at about 8 O'clock with the word *sira* (ri) and ended with *Kumarasa,* the symbol svastika and *nandipada* acting as a dividing line between two parts of the legend. In that case the legend will have to be restored as *sira (ri) Sata (sa*) Kumarasa.* Though it has been suggested above that the letter *ta* was probably followed on the die by *sa* which has not been accommodated on the coin, as at present there is some space above the svastika which is left blank and there is absolutely no trace of any letter in that space. It is thus likely that there was no letter intended to be engraved in the space above svastika and the whole legend is accommodated on the two sides of the devices svastika and *nandipada* which are almost in alignment with the letters flanking them. In that case the legend will have to be restored as *sira (ri) Satakumarasa.* It is interesting to note in this connection that on some other Satavahana coins almost the same devices are noticed in between the legend and on large number of coins in the Peddabankur (Karimnagar District, Andhra Pradesh) hoard *Srivatsa* alone or in combination with some other devices is found dividing the legend into two parts. It must be pointed out that we meet with two different forms of *s* in the legend. The *da* preceding *ta* and that following *ra* have practically an identical form, the apparent difference being due to the fact that of the *sa* preceding *ta* only the lower portion has been accommodated, the upper portion of the left limb being off the flan. The *s* of *si* before *ra* in the word *sira (ri)* presents a somewhat different appearance, because the medial sign

for *i* is attached to the right limb instead of the left limb as usual and also because the loop attached to the left limb has turned into almost a complete circle but for the presence of a slight gap in it. The absence of this slight gap between its right end and the lower portion of the main body of the letter might have led one to read the letter as *ma*. The presence of such slightly differing forms of the same letter in the same inscription or coin legend is not unusual and should not surprise one familiar with inscriptions and coins.

As only the lower portions of the letters *sa* and *ta* before the svastika are accommodated on the coin, and their verticals are off the flan, it is difficult to ascertain if any medial sign was attached to the tops of these letters. However, as *Sata* by itself is unlikely to have been used as a proper name, it is likely that the letters were not without medial signs. We know of a fairly good number of coins from Central India[1] belonging to the early centuries of the Christian era which bears the name *Sati*. We may therefore hazard the conjecture that the intended name on the present coin was also *Sati*. The entire legend was thus intended to be *Kumarasa siri-satisa* and the coin was thus issued by a chief named *Sati*. It may be mentioned in this connection that a prince named Sati (Sati-sirimata)[2] is mentioned in the larger Nanaghat (Pune District, Maharashtra) inscription which aims at describing the sacrifices performed by a queen. This inscription is commonly attributed to the Satavahanas and taken to belong to Naganika, the widowed queen of Satakarni. But recently this view has been questioned by P. L. Gupta.[3] Be that as it may, it appears reasonable to identify Sati-sirimata of this inscription with King Sati known from the above mentioned coins. According to the legend as restored by us, the present coin also may be reasonably attributed to the same chief. But there is a significant difference between the present coin on the one hand and other coins of Sati on the other. Typologically speaking, there is absolutely no similarity between them. And as regards the legend, while the name of the king on Central Indian coins is preceded by the regal title *rajan* in genitive singular in its Prakrit form *rano* in addition to the honorific *siri*, on the present coin we find the title *Kumarasa* instead of the usual *rajan*. It may therefore be concluded justifiably that our coin was issued by Sati at the time when he was functioning as a crownprince (*Yuvaraja*) and was put in charge of the administration of the province comprising the present Kurnool District and the adjoining area of Andhra Pradesh and Karnataka. It may be mentioned in this connection that the minting of coins was not treated as a royal prerogative in ancient Indian and there are numerous instances of persons occupying a subordinate position issuing coins in their own names. To cite only a few examples, coins issued by the Maharathis who occupied a subordinate position under the Satavahanas in the Chitaldurg area of

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[1] For references and detailed discussion see Ajaya Mitra Shastri,' Satavahana Coins from Malwa' *Indore University Research Journal,* V, pp. 1 to 9.

[2] Sircar, D. C., *Select Inscriptions,* (Calcutta, 1965), I, p. 194, Text line 4. The use of the honorific *Sirimata* (Srimat), after the name need cause no surprise as according to the mannerism obtaining in Ancient India the honorific could be used either before or after the personal name.

[3] Gupta, P. L., *Studies in Indian Epigraphy,* II, pp. 59 to 71.

Karnataka,[1] Virapuram (Kurnool District, Andhra Pradesh)[2] and the Vidarbha region of Maharashtra[3] are well known. Similarly the coins issued by the Mahatalavaras, Mahagramikas and possibly Mahasenapathis have also come to light.[4] We also know of a fairly good number of coins issued by traders'guilds (*Nigamas*)[5] and the organisation of such professionals as perfumers (*Gandhika*)[6] and administrative organisations of some of the ancient cities including Varanasi, Kausambi, Tripuri, Vidisha, Mahismati, Ujjayini, Ayodhya, Tagara, etc.[7] There is therefore nothing surprising if a crownprince occupying an important administrative position issued or was authorised to issue coins in his own name. To our knowledge, this is so far the only coin known to have been issued by a prince of royal blood occupying the position of the crownprince and holding an administrative charge.

Who was *Kumara Sata (Sati)?* To answer this question we have to fall back upon the Jaina literary tradition[8] which refers to one Saktikumara who is reported to have been a son of king Salivahana of Pratisthana (modern Paithan, Aurangabad District in Maharashtra). While we may not be quite sure about the correctness of the tradition regarding Saktikumara, son of Salivahana (an attempted Sanskritisation of Satavahana), there is no reason to doubt his historicity and he has, infact, been often identified with King Sati of Central Indian coins and Kumara Hakusri (Saktisri mentioned in a label-inscription in the Nanaghat pass).[9] Once the historicity of prince Saktikumara is conceded, Kumara Sata (Sati) responsible for issuing the present coin can be easily identified with him. It may perhaps be argued that while the name of the son of Salivahana is given as Saktikumara in the Jaina tradition, the coin under discussion names him as Kumara Sata (Sati)). It is interesting to note in this connection that in ancient India the honorific or *biruda* could be mentioned either before or after the personal names, there being no fixed rule about its position. To cite an instance, on some Chandragupta Kumaradevi type coins the word *Sri* is prefixed to the name of the queen while on others it is suffixed to her name.[10] Similarly we know that Deva or Devagupta was the 'dear name' *(Priyanama)* of

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[1] See the coin with the legend *Sadakana Kalalaya Maharathi* (Rapson, BMC, AWK, p. lxxxii, Pl. VIII, No. 234).

[2] Information from Dr. T. V. G. Shastri, Director, Birla Archaeological and Cultural Research Institute, Hyderabad. Alsa see *Excavation at Veerapuram* (Hyderabad, 1984),

[3] *JNSI,* Vol. XXXV, pp. 236-237.

[4] Sircar, D. C. *Studies in Indian Coins,* pp. 139-114.

[5] Allan, *BMC, AI,* pp. cxxx; 214 to 218.

[6] Bajpai, K. D. *Indian Numismatic Studies,* p. 3 and pp. 52-53.

[7] *JNSI,* Vol. XXXVII (ii), pp. 35 to 54.

[8] *Viridhatirthakalpa,* Story No. 34, p. 64, See also V. *C. Raychaudhuri, Political History of Ancient India,* 7th ed. p. 369 and Note 4. D. C. Sircar in '*The age of Imperial Unity*' (Ed. R. C. Majumdar) (Bombay, 1951), p. 198. *Also see Comprehensive History of India* (Ed. K. A. Nilakantha Sastri) II, p. 303.

[9] Sircar, D. C. *Select Inscriptions,* (Calcutta, 1965), p. 191.

[10] Altekar, A. S. The Coinage of the Gupta Empire, (Banaras, 1957), p. 33.

the Gupta emperor Chandragupta II Vikramaditya.[1] But on many of his coins the honorific *Sri* is suffixed to the name Deva.[2] Therefore the title *Kumara* could be used either before or after the personal name. In fact, keeping in view the structure of the legend on contemporary coins of the Deccan where the regal title *rajan* and the honorific *sri* is invariably prefixed to the personal name of the king,[3] the princely title *Kumara,* together with the honorific *sri,* should also be expected to precede the personal name of the prince. In later times when the word *Kumara* came to be popularly used as a name-ending, *Kumara Sakti* also came to be popularly known as *Saktikumara.* It is interesting to note in this connection that the name Saktikumara is met with only in the late medieval Jaina traditions, there being no reference to him in early texts. In case, however, the legend is taken to begin with the word *siri,* and end with *Kumarasa,* there will be absolutely no difficulty in identifying the issuer of this coin with Saktikumara of the Jaina tradition. The coin thus proves for the first time the existence of prince Saktikumara even though no claim can be laid to the historicity of all the different stories associated with his name.[4]

The name of the find-spot of this coin, Satanikota, is indeed very interesting historically. The antiquity of the present name, according to available evidence goes back at least to the Vijayanagar Period. We learn from the 16th cent. Telugu work *Ramarajiyamu*[5] also known as *Narapativijayamu* by Nandugula Venkayya, a contemporary of Aliya Ramaraya, the son-in-law of the Tuluva emperor Krishnadevaraya of Vijayanagar that the Aravidu king Somadeva, a predecessor of Ramaraya conquered seven forts in a series ending with Satanikota. It is worthwhile to note that the other six forts[6] mentioned in this connection are all situated in the Andhra-Karnataka area adjoining Satanikota. There can, therefore, be no doubt that this Satanikota, mentioned by Nandugula Venkayya is the same as the modern village of Satanikota. Moreover, the remains of fortification of the medieval period on the eastern side of the village put a seal of finalty on this identification. The name Satanikota is obviously a corrupted form of the name Satavahanakota, i.e. the

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1 Sircar, D. C., *op. cit.,* (1965), p. 281, Text lines 7 and 8. It states that Devaraja was his dear name. In some Vakataka inscriptions the name of the father of Prabhavatigupta is given as Devagupta.

2 Altekar, A. S., *op. cit.,* (1957), pp. 99 (Archer type).

3 *eg.* : On the Satavahana coins the personal name of the king is invariably preceded by the royal title *rajan* and the honorific *sri* in addition to the matronymic which is absent on some of the coins.

4 The dynastic list of Puranas refers to as many as 8 Andhra kings whose names contained the word Svati. See *BMC, AWK,* lxvi to lxvii. One may perhaps argue that the Satanikota coin should be attributed to one of these rulers, sati being a corrupt form of svati. But this is rendered impossible by the fact that on the only known coin of Meghasvati the word *svati* is Prakritised as *sada.* See *ibid.,* Pl. V, No. G. P. S. E. Even if it is conceded that *svati* could also be Prakritised as *sati,* the presence of the letter *gha* on the coin of Meghasvati would show that in cases where *svati* formed the concluding part of the name, the first part of the name was also given on the coins.

5 Krishnaswamy Ayyangar, S., *Sources of Vijayanagar History,* Madras (1919) pp. 79-82; K. A. Nilakantha Sastri and N. Venkataramanaiah, *Further sources of Vijayanagara History* (Madras, 1946). Vol. III, p. 6, and Mac. Mss. 13-2-19, pp. 284-85.

6 Mosalimadugu, Kandanavolu (Kurnool), Kalavakolanu, Rachur (Raichur), Etagiri (Yadagiri) and Ganginenikonda. K. A. Nilkanta Sastri and N. Venkataramanaiah, *op. cit.* (1946), p. 6.

fort of the Satavahanas. The name is comparable to Satavahanihara which is a corrupt form of Satavahanahara (i.e. a Satavahana district) and is mentioned in the Mayakadoni inscription (popularly known as Adoni inscription) of the Satavahana king Pulumavi dated in the 8th year of his reign.[1] Dr. V. S. Sukthankar, who edited the inscription, identified this Pulumavi with Vasisthtiputra Pulumavi, son of Gautamiputra Satakarni.[2] V. V. Mirashi has, however, recently proposed to identify him with the last Satavahana king of that name.[3] Be that as it may, the find-spot of this inscription is not very far from Satanikota and is actually situated in the same district. The inscription thus clearly establishes that the area surrounding Satanikota was included within the dominions of the Satavahanas in the 2nd-3rd centuries of the Christian era. This fact and the Jaina tradition about Saktikumara thus seem to indicate that Satanikota was under the Satavahanas and was an important fortified military centre of the period and may as well have been the headquarters of the province administered by Kumara Sata (Sati) as a viceroy. The stratigraphy of the excavation may perhaps be taken to indicate that Saktikumara flourished about 1st century A.D. as his coin was encountered in the earlier layer of Period II, which is as stated above, roughly datable from about the middle of the 1st century B.C. to about the middle of the 3rd century A.D.

If Kumara Sata (Sati) of this coin is the same as King Sati of Central Indian coins, it will follow that as a prince he ruled over the Kurnool region of Andhra Pradesh, and later after the death of his father when there was division of the empire,[4] he had to shift his headquarters northwards.

It will follow from the foregoing discussion that the excavations at Satanikota have given us the unique coin of prince Saktikumara which has thrown considerable light on the history of the Satavahanas besides confirming the existence of prince Saktikumara known from the Jaina tradition.

Adjacent to the megalithic burials on the 'High Ground' (locally known as Gurramuggada, i.e. Horse Stable) some soundings were taken in order to find out the microlothic spread at the site. In one of such soundings (M.T.T.-2), within a space of 2 × 2 m a very much defaced and worn out roundish lead coin (Reg. 5/78-79) (Pl. LXII, 2) was recovered in association with the early historical black-and-red, and black-slipped wares just above the microlithic bed. This was not *in situ* as it was found in a re-deposited material.

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[1] *EI,* XIV, p. 155.

[2] *Ibid.,* p. 154.

[3] Mirashi, V. V., *Satavahana ani paschimi kshatrapancha Itihasa ani Koriva lekha,* p. 82.

[4] It seems that the Satavahana empire was divided between Sati, i.e. Saktikumara and Satavahana who is obviously identical with Kumara Satavahana of a Nanaghat label inscription. (D. C. Sircar, *Select Inscription,* I, p. 191). The division seems to be indicated by the find-spot of their respective coins, coins of sati being confined to northern and those of Satavahana to the southern portions of the dominions of the Satavahanas.

The coin is described below :

Size	:	1·6 cm (roundish)
Weight	:	3·6 gm.
Obverse	:	Traces of a standing horse to right.
Reverse	:	Plain (completely worn out).

In the absence of any legend, it would be difficult to attribute this coin to any king. However, on comparing the size, shape, fabric and the obverse symbol, it may be attributed to some later Satavahana king.

Of the three copper coins, two coins (Reg. No. 909A and 909B) found on the surface, one on the 'Village Mound' and the other on the Enugulakota (Elephant stable), are the identical issues of Alauddin-Muhammad Shah Khalji of Delhi (A.D. 1296-1316), while the third one (Reg. No. 908) also found on the 'Village Mound' is an issue of Shamsu'd-Din-Muhammad Shah Bahmani of Bidar (A.D. 1463-1482). The date-portion on all these coins is cut off. The language of the coins is Arabic, while the script is Naskh.

The coins are described below :
(Pl. LXII, 3) (Reg. No. 908) :
Copper coin, roundish.

Weight		14·67 gm.
Size	:	2·1 cm.

Obverse	*Reverse*
Al Mu'tasim (billah)	Muhammad Shah bin Humayun
(Abull Muzaffar) Shamsu'd-dunya W'a-Din	(Sha) As-Sultan (Khallada mulkuha)

(Pl. LXII, 4 and 5) (Reg. No. 909 A and B) :

These are identical twin coins, one (Reg. No. 909A weighs 2·65 gm and the other (Reg. No. 909B), weighs 3·1 gm with the same size of 1·6 cm.

Obverse	*Reverse*
4. As-Sultanu'l	Muhammad Shah
5. Azam 'Alau'd-Dunga Wa'd-Din	(Devnagari portion mentioning the name of the king)

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PLATE I

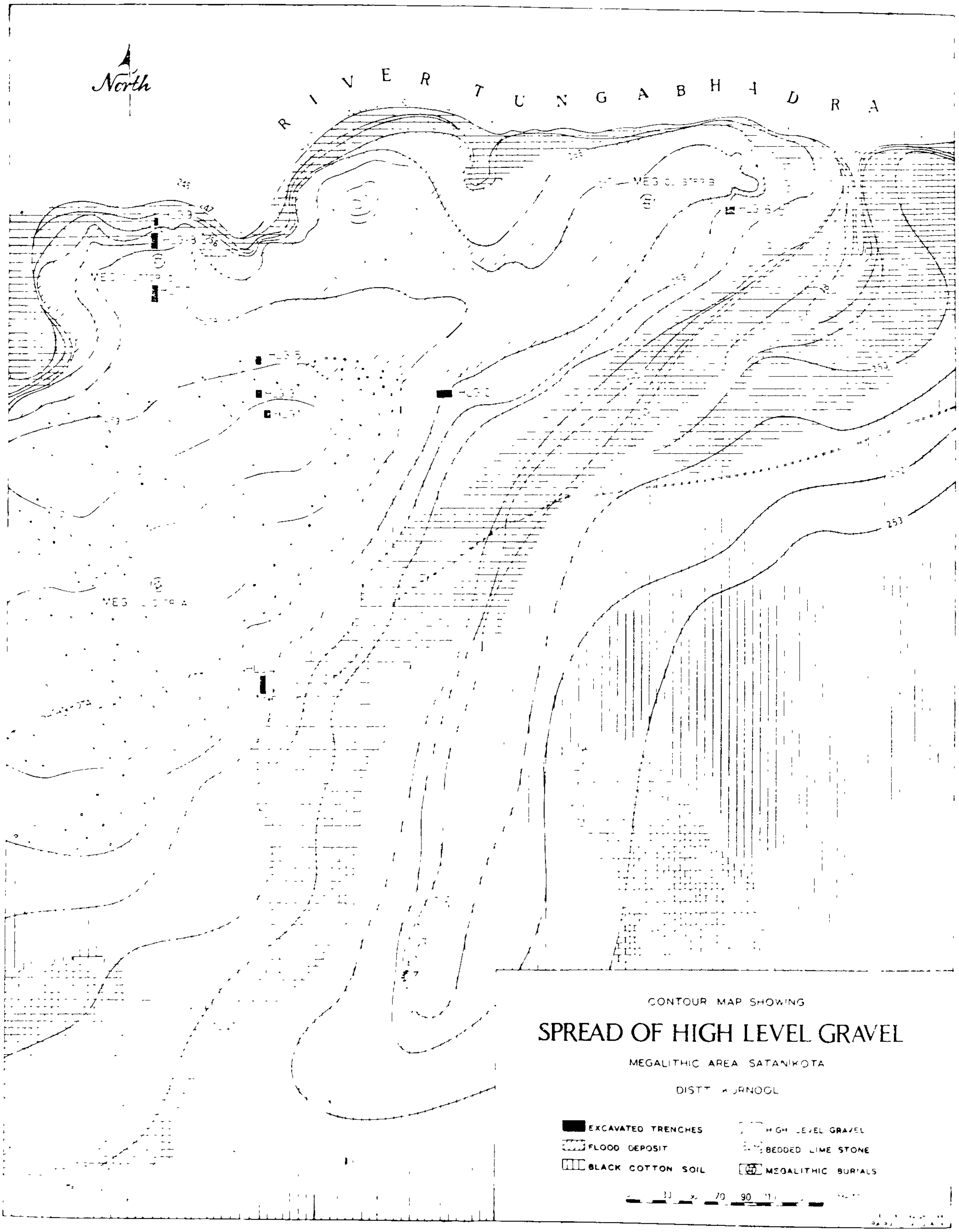
General view of the 'Village Mound' with the River Tungabhadra in the foreground. See p. 8

PLATE II

Mediaeval watch tower on the northern edge of the escarpment, with River Tungabhadra flowing 9 m. below. *See p. 9*

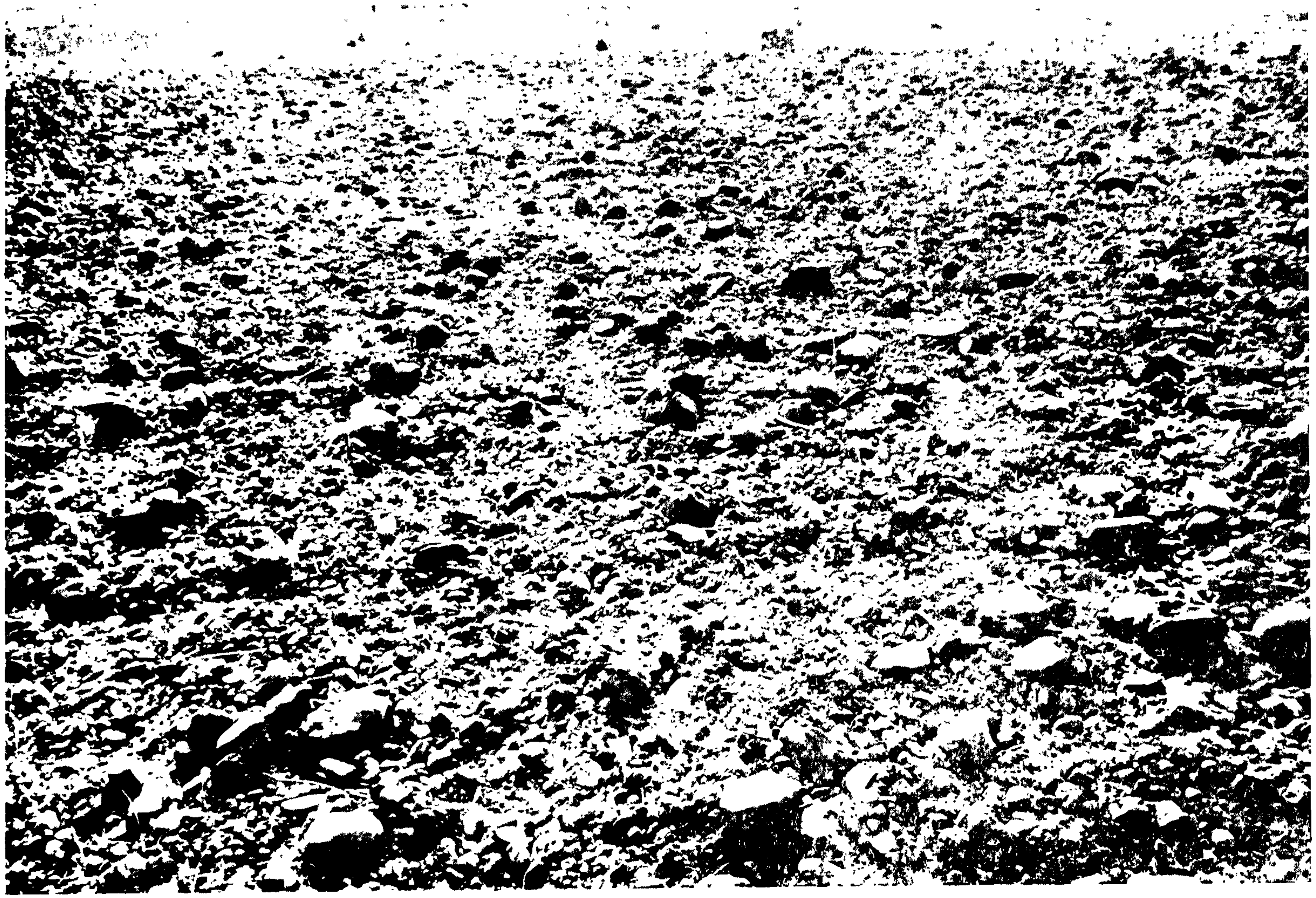
Renovated Early Chalukyan Temple. See p. 16

PLATE IV



Contour map of the 'High Ground' showing the high level gravel spread. *See pp 20, 22 and 40*

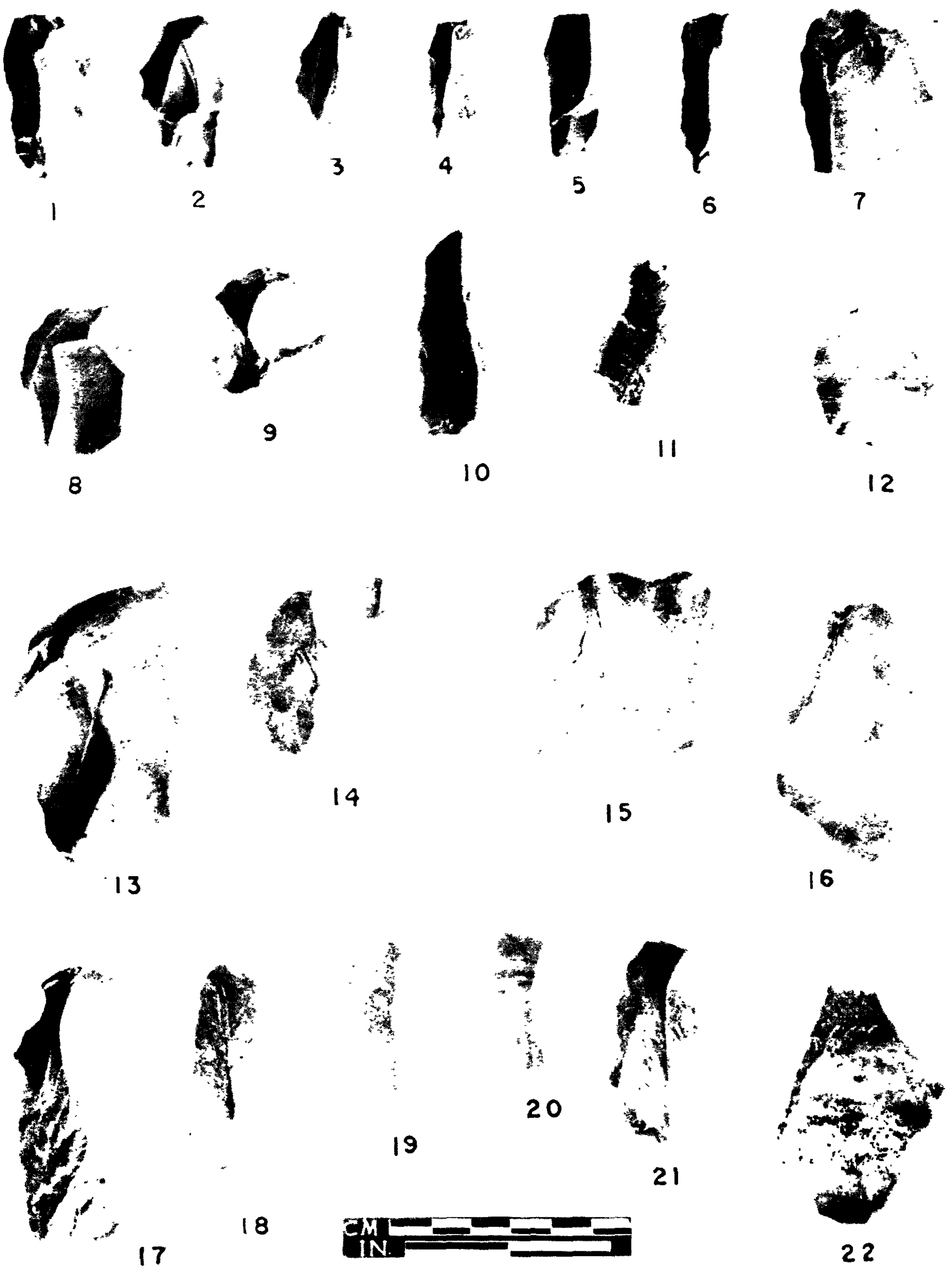
PLATE V



Spread of high level gravel on the 'High Ground'. River Tungabhadra flowing to right in the background. See p. 20

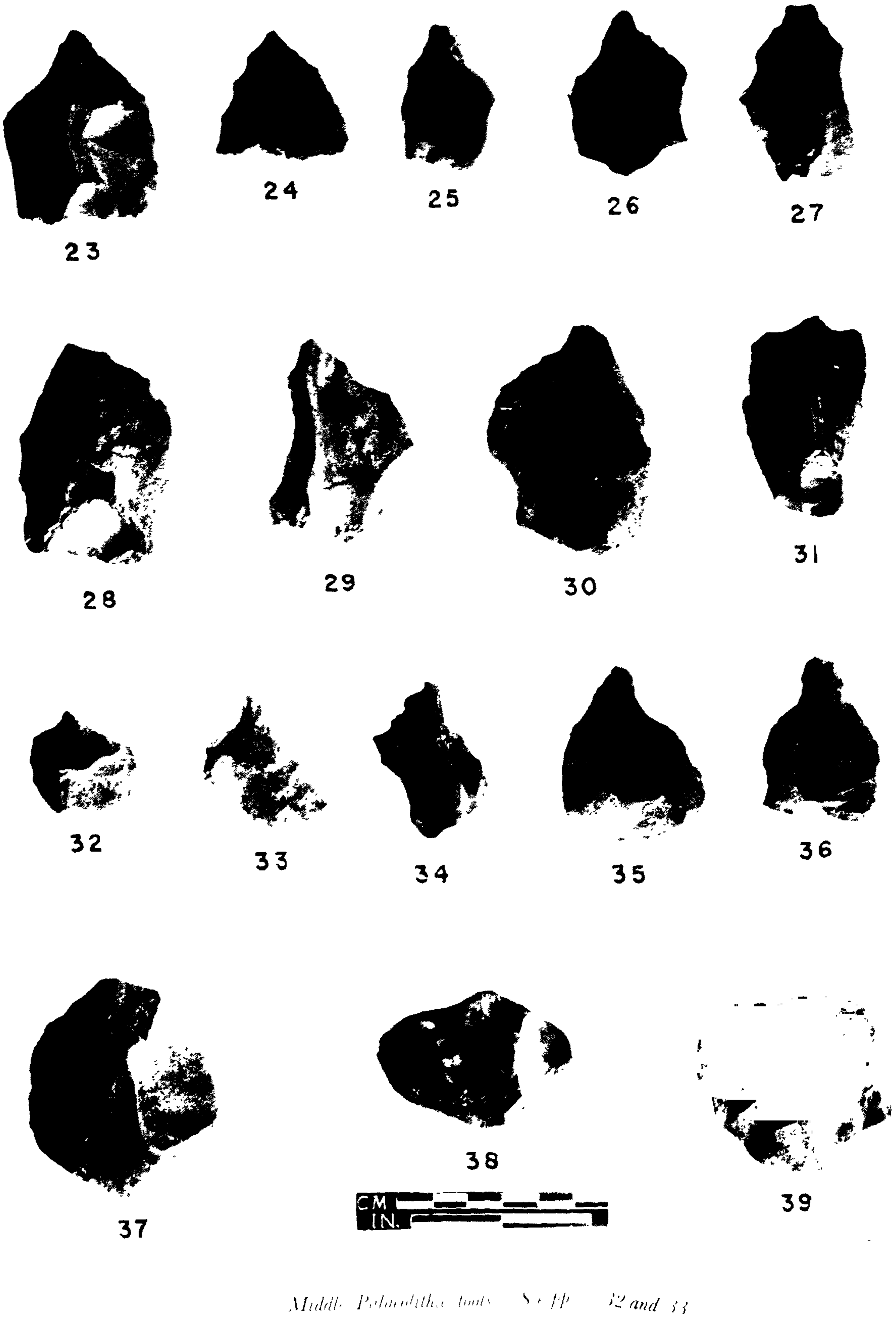
PLATE VI

HLG-1. Gravel deposit lying over the weathered and undulated limestone bed-rock. *See p.* 23

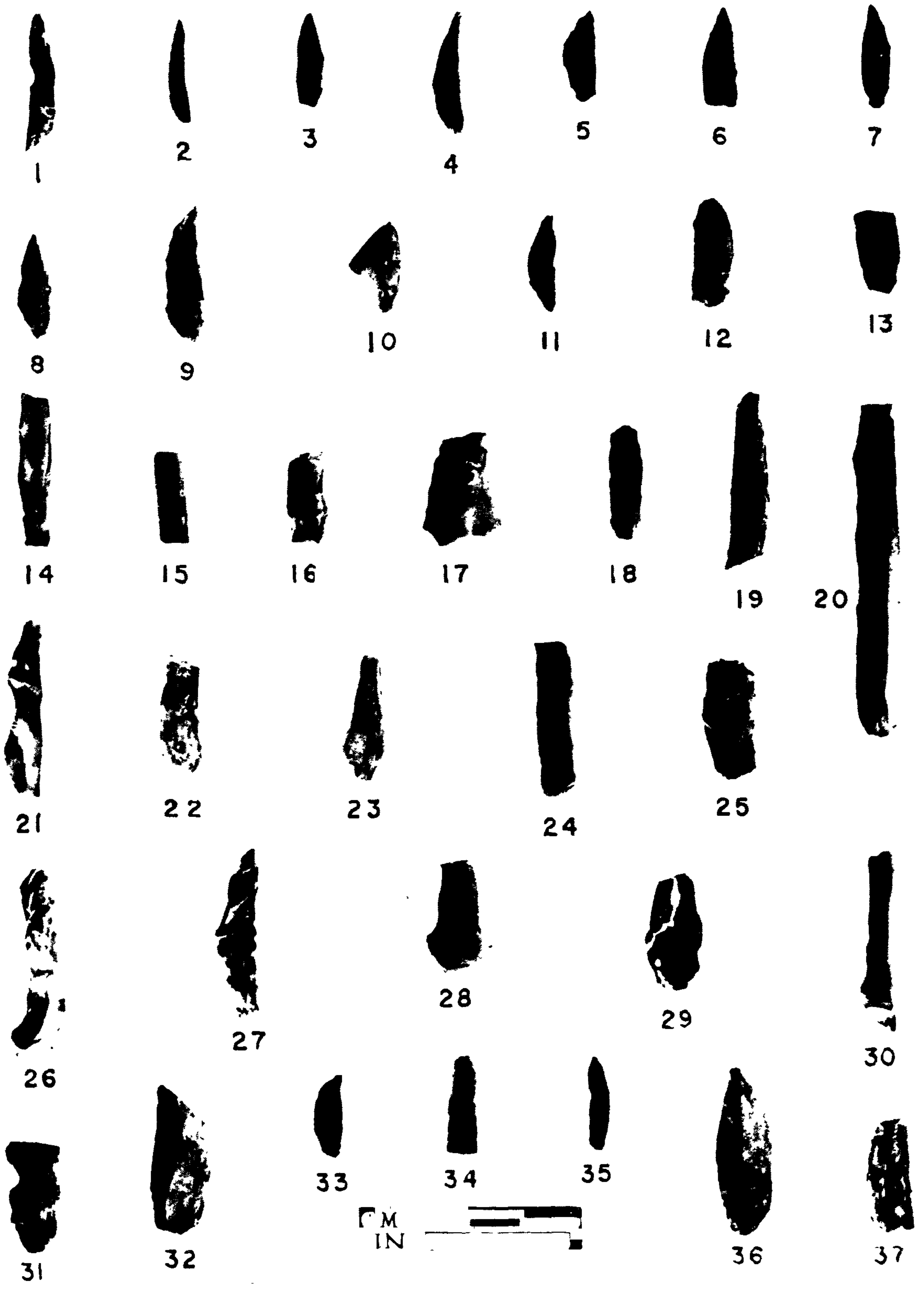


Middle Palaeolithic tools. See pp. 29 and 30

PLATE VIII

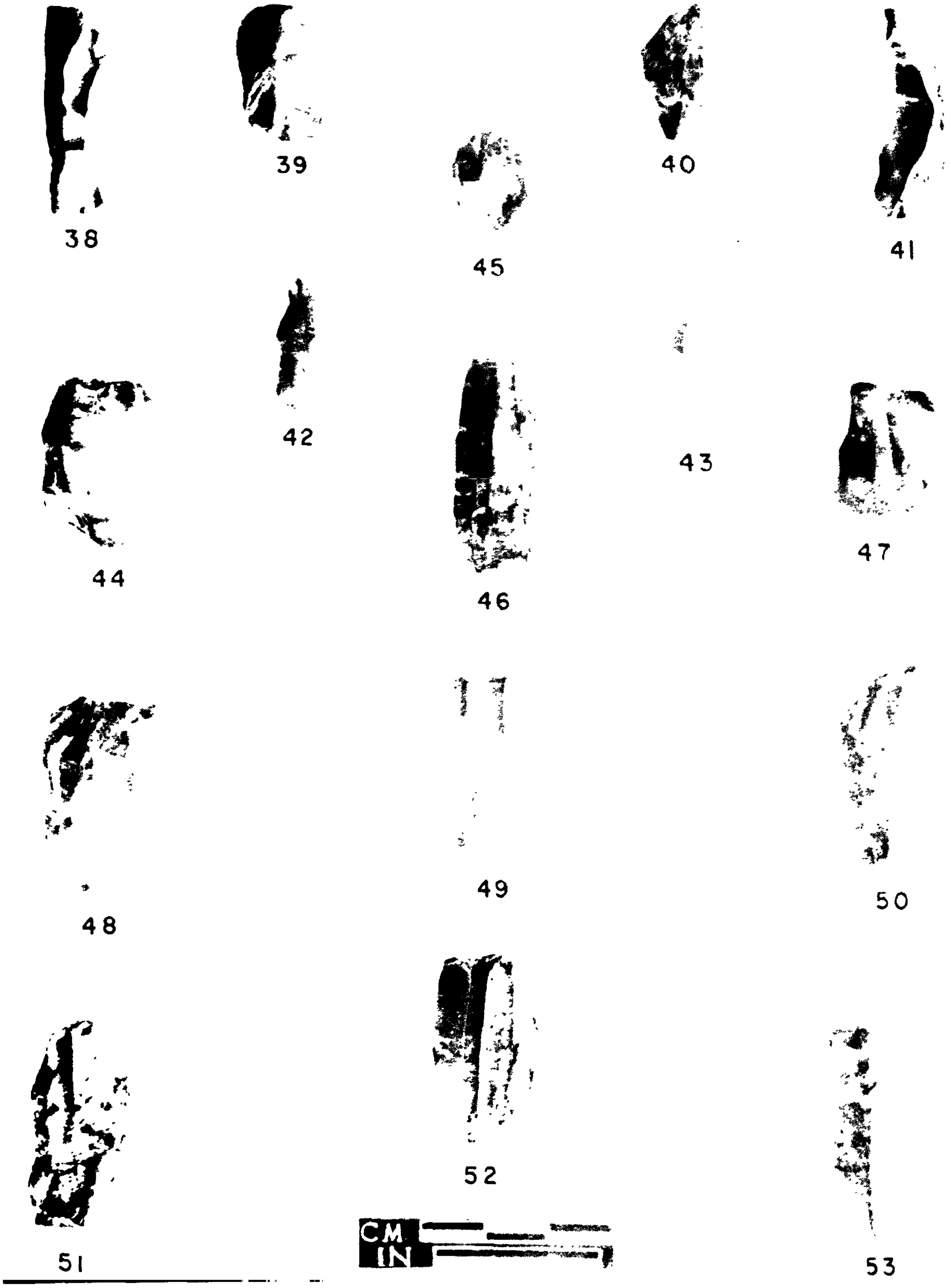


Middle Palaeolithic tools. See pp. 32 and 33



Mesolithic tools. See pp. 35, 37, 38 and 39

PLATE X

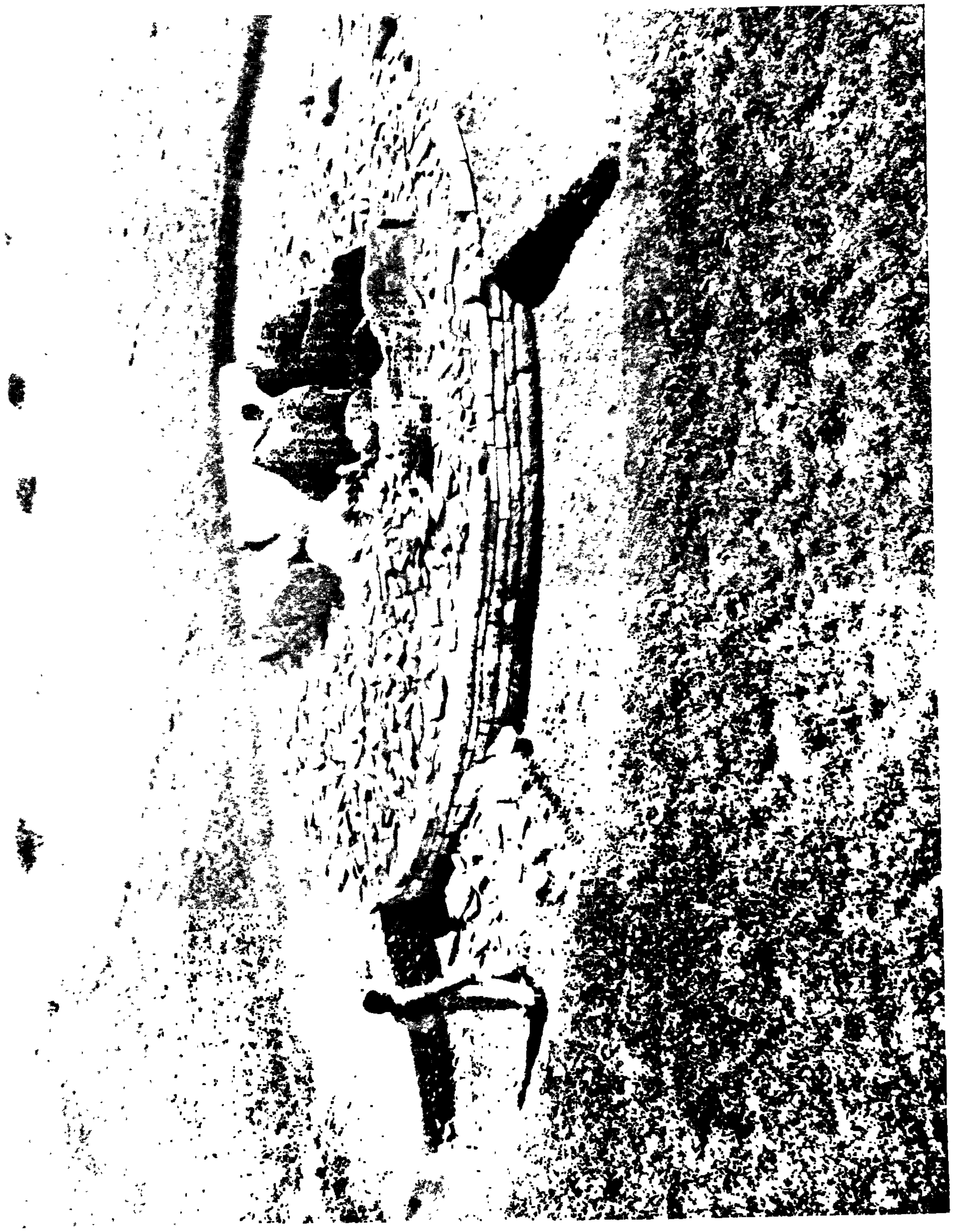


Mesolithic tools. See pp. 37, 38, and 39

General view of passage type of megaliths in Cluster A. *See p. 40*

PLATE XII

Architectural details of Meg. XI. *See p. 42*



Meg. XII during excavation See p. 43

PLATE XIV

Meg. XII after excavation showing transepted cist and passage, interconnected. *See p. 43*

Cast of Meg. XIII during excavation showing burial goods. *See p. 46*

PLATE XVI

Meg. BVII during excavation. *See p. 46*

Skeletal remains in the cist of Meg. BXVII in the upper level. *See p. 46*

PLATE XVIII

Skull and long bones with solitary iron arrowhead and potsherds on the floor slab of the cist of Meg. BXVII. *See p. 46*

Wavy line design on the face of the bounding stone of Meg. BXVII. *See p. 46*

PLATE XX

Meg. C1 during excavation. *See p. 40*

PLATE XXI

Skeletal remains and pots on the bottom of the Meg. Cl. See p. 49

Skeletal remains of goat ram in the filling of Meg. C.I. *See p. 49*

Human skeletal remains in the filling of Meg. CI. *See p. 49*

PLATE XXIV

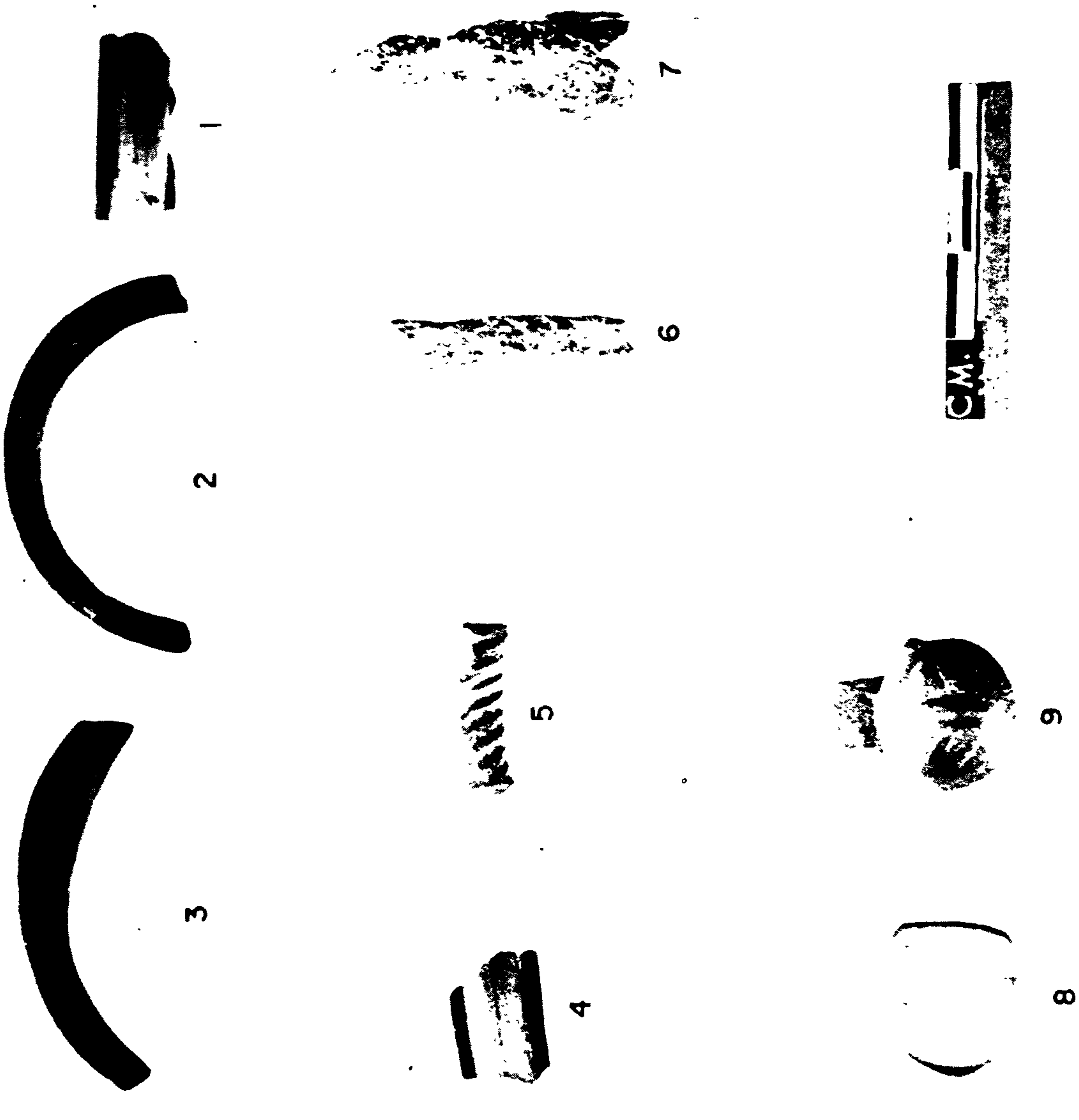
Stagecase filling of Meg. BI. *See p. 50*

PLATE XXV

Grave goods at the bottom of Meg. BI. *See p. 50*

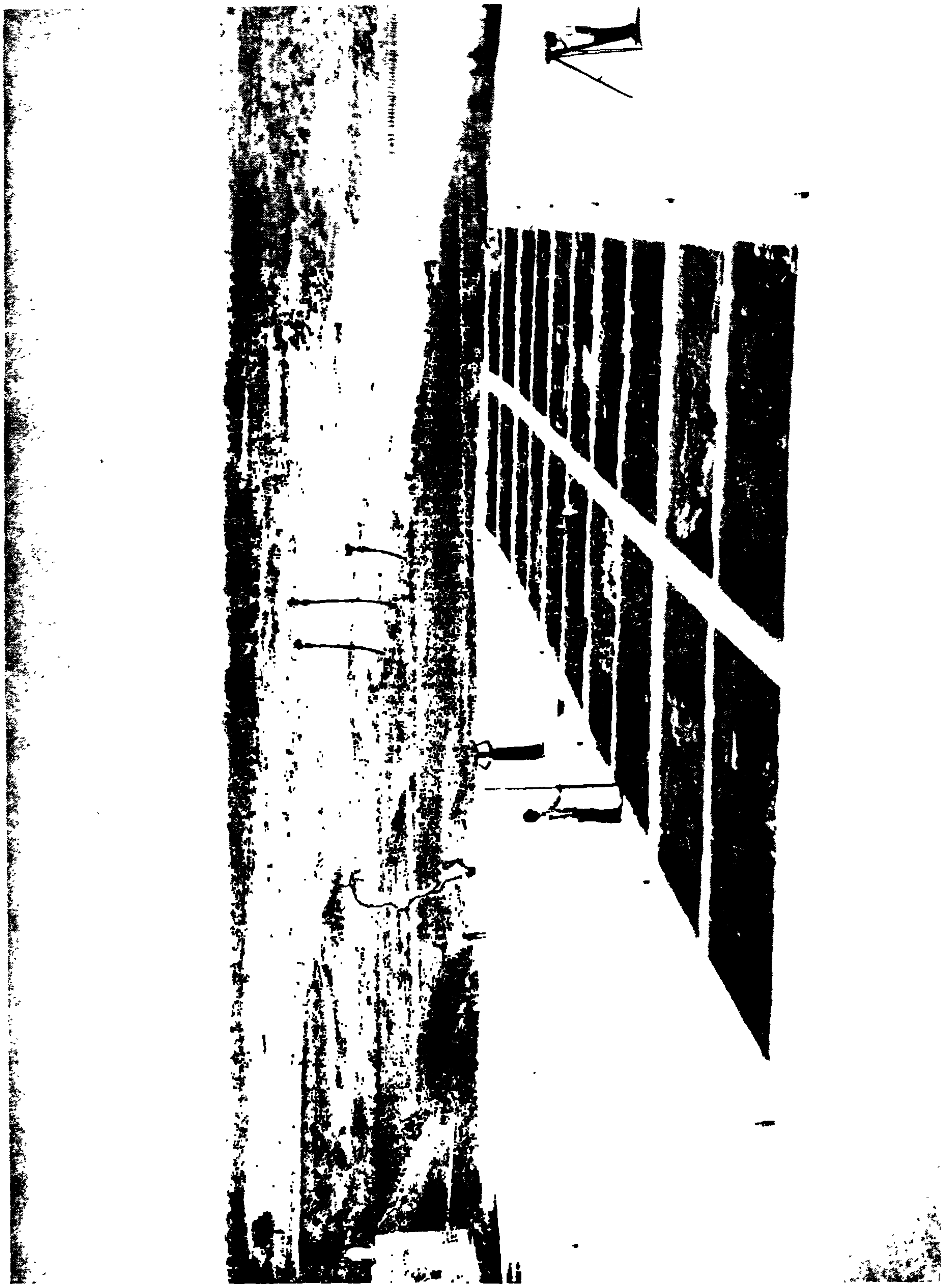
PLATE XXVI

Meg. BVII during excavation. See p. 51



Antiquities from the megalithic tombs. *See pp. 74 and 76*

PLATE XXVIII



SIh-I General view showing work in progress. See p. 82

STK-2. See pp. 88 and 95

Gateway complex on the south (STK-3 & 34). *See pp. 88 and 97*

STK-7. See p. 92

PLATE XXXII

S I h-10 See p. 93

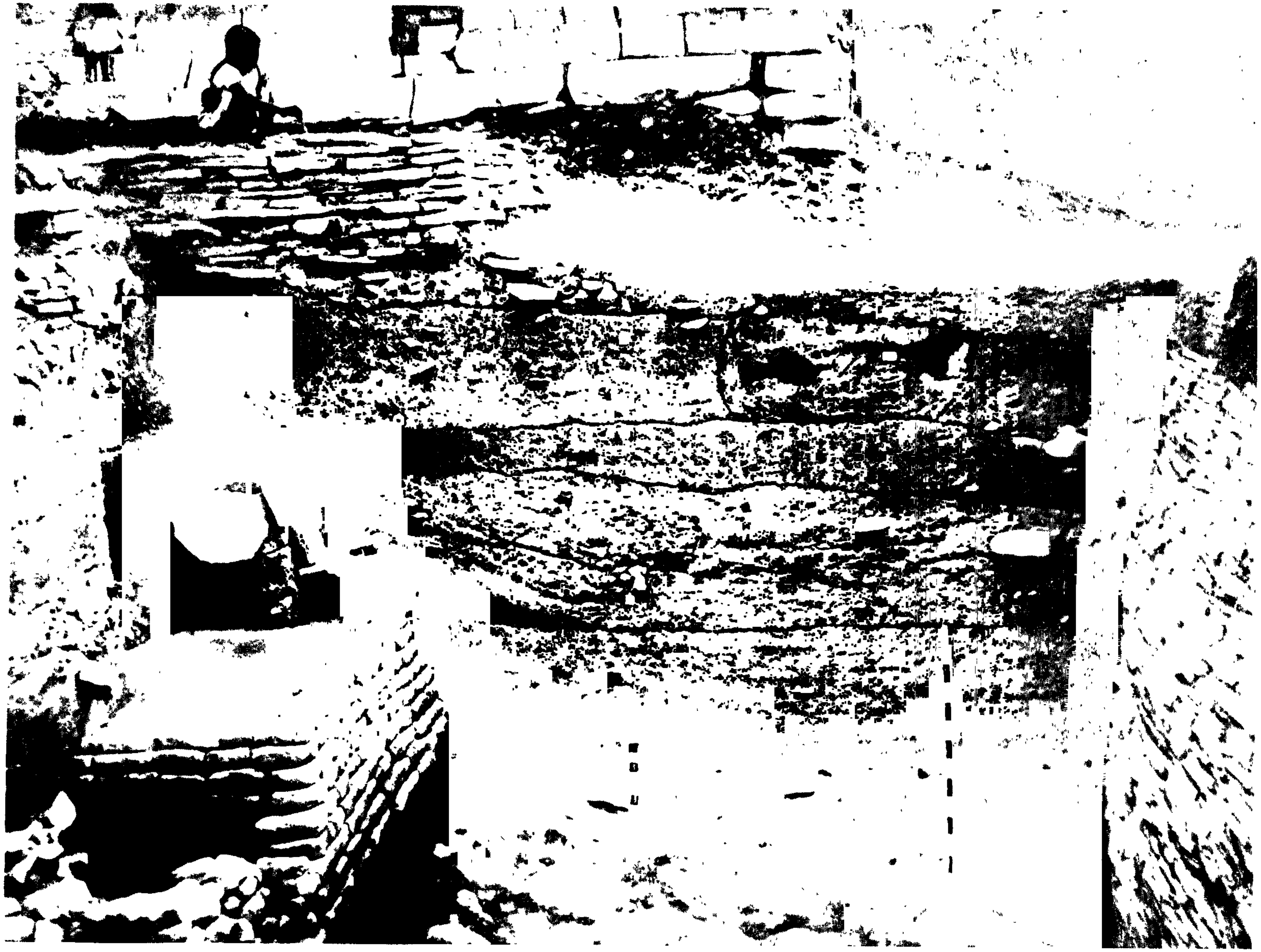
STh-12. See pp. 94 and 95

PLATE XXXIV

Details of the stone rampart with baked brick facing See p. 95

STK-1. Showing outer embankment of the moat. *See p. 95*

PLATE XXXVI



STK-12 Showing the foundation (top) of the Early Chalukyan temple on the remains of the stone rampart See p 97

Remains of medieval fortification *See p. 97*

PLATE XXXVIII

Ghost walls of period II. *See p. 98*

Granaries along with ghost walls. See p. 98

PLATE XL

Remains of brick-built house. Period II. *See p. 98*

Details of gateway. See p. 99

PLATE XLII

Baked brick-built structure from Period II with a drain and a stone slab floor

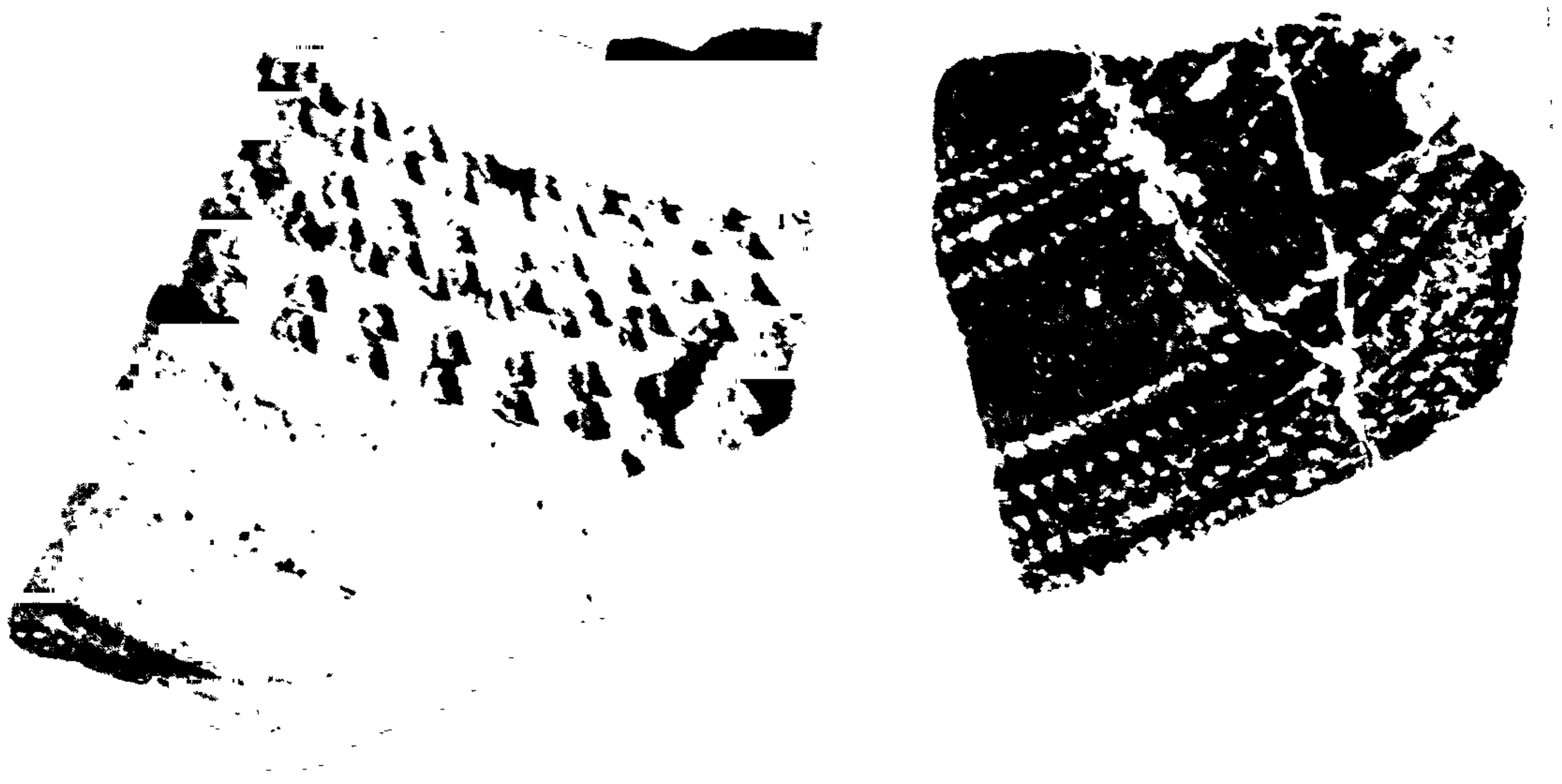
See p. 99

PLATE XLIII

Structural Remains of Period III. See p. 99

Roof tiles and finials. See p. 101

A

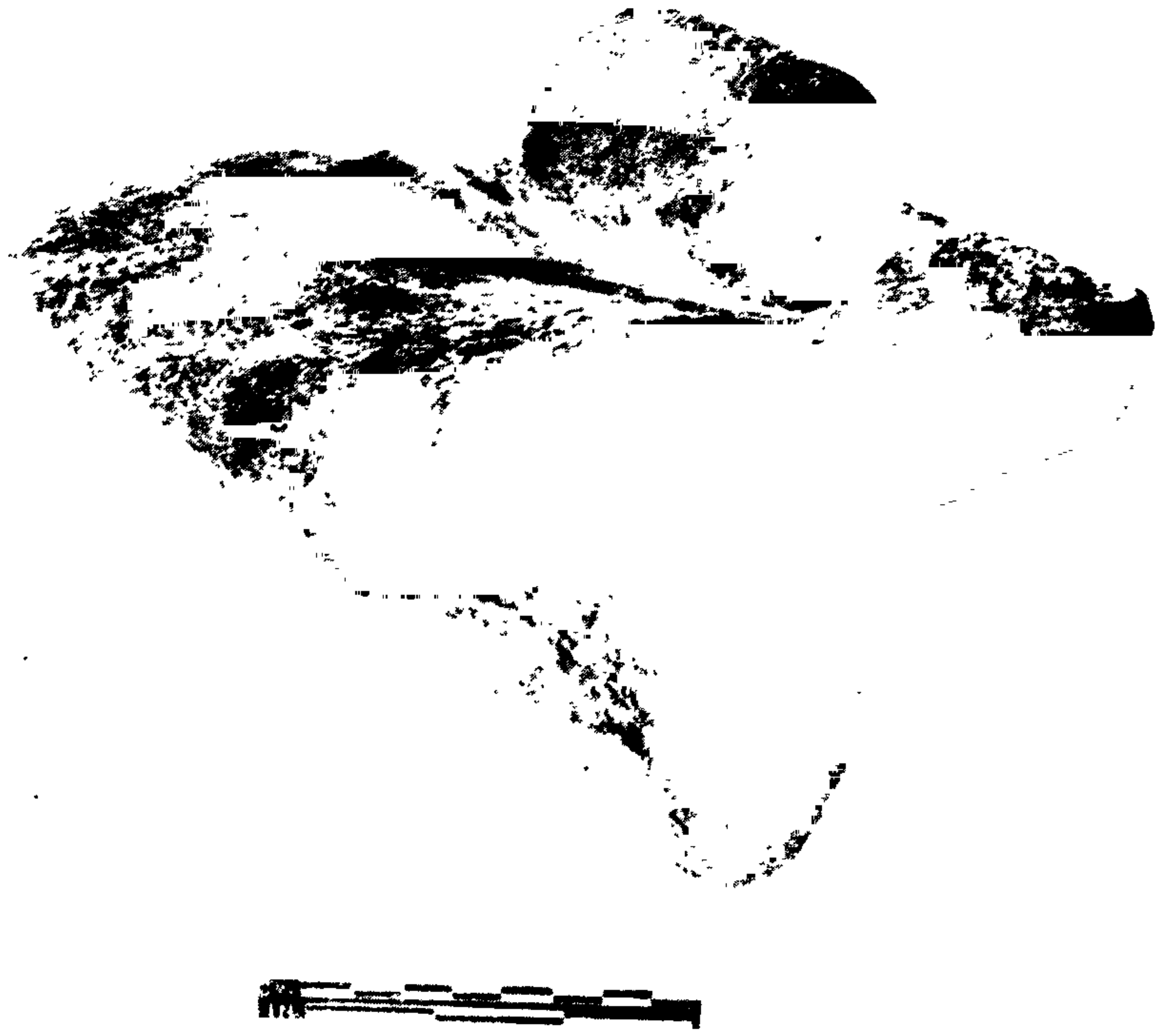


B

A, Painted russet coated ware; B, Rouletted ware. See pp. 103 and 107

PLATE XLVI

A

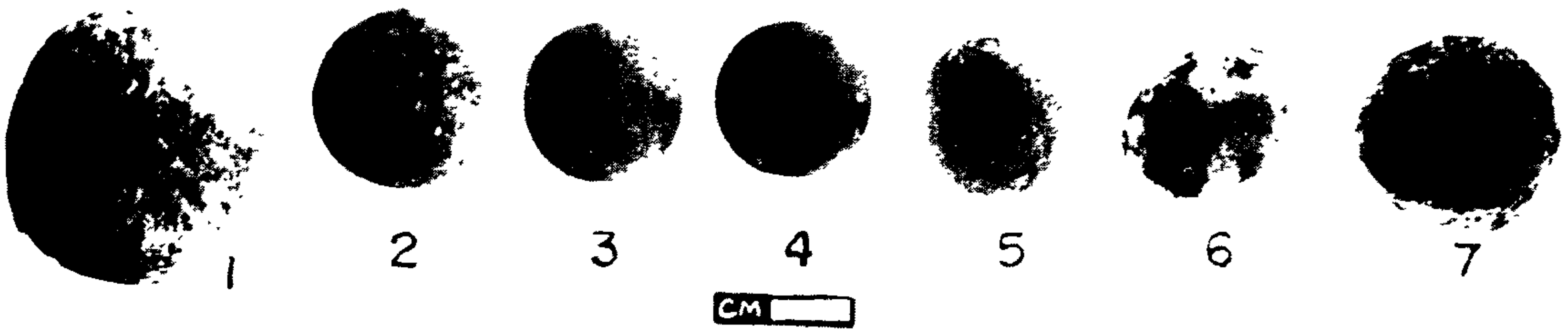


B

A, Black and red ware bowl; B, Legged quern and muller *See pp. 115 and 154*

Sculptures. See p. 173

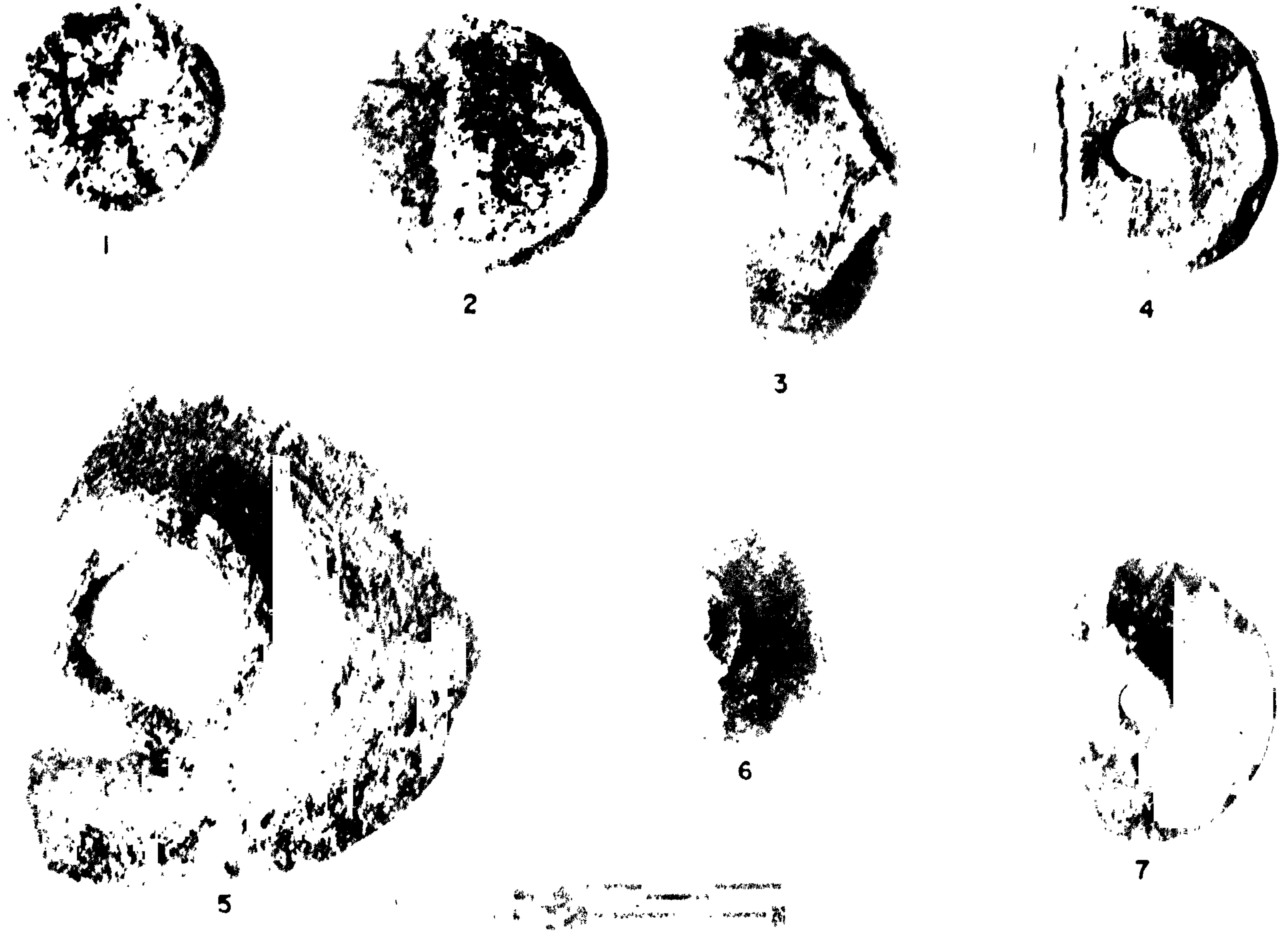
PLATE XLVIII



A

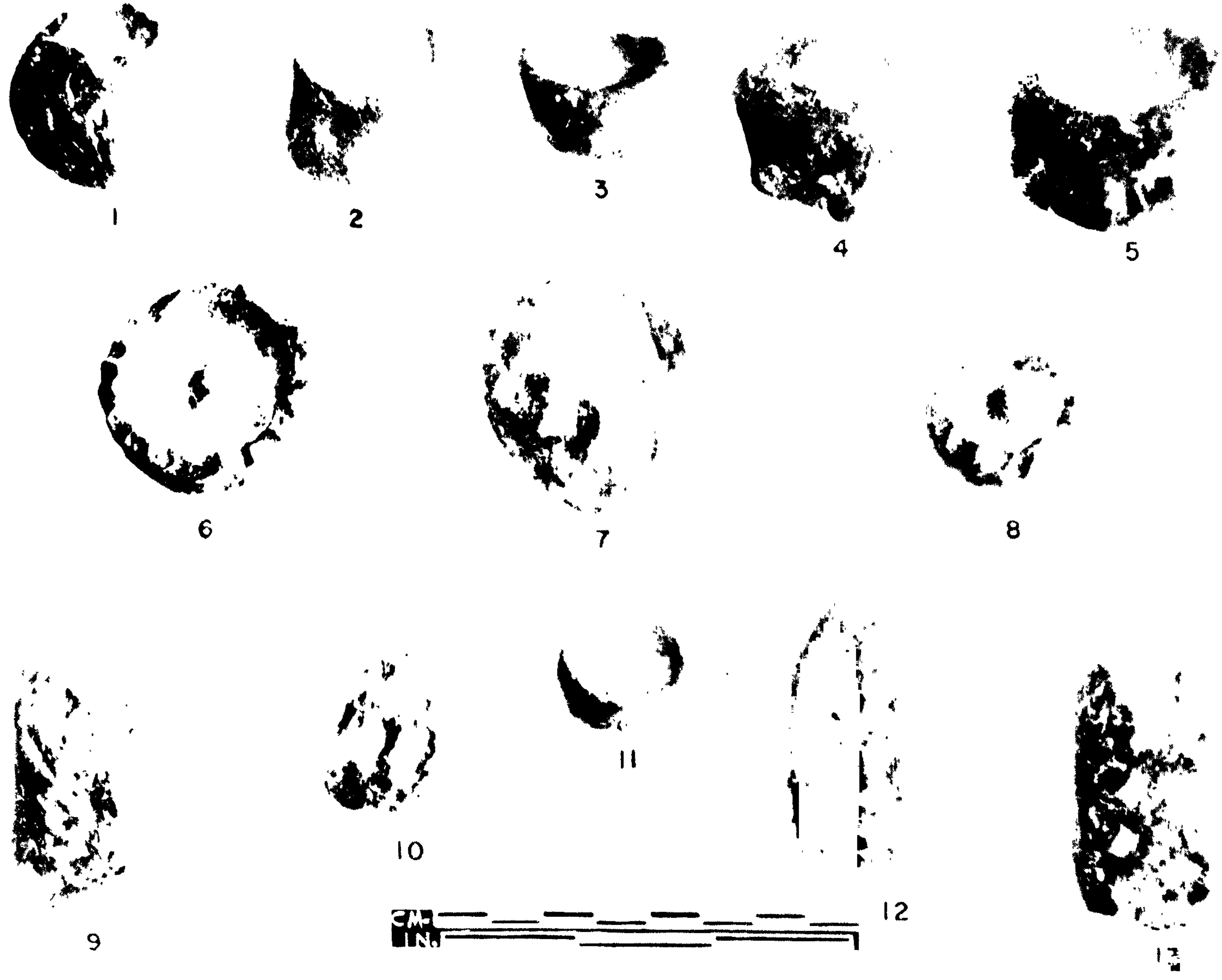
B

A, Stone balls ; B, Head of terracotta female figurine, Period II. *See p. 155*



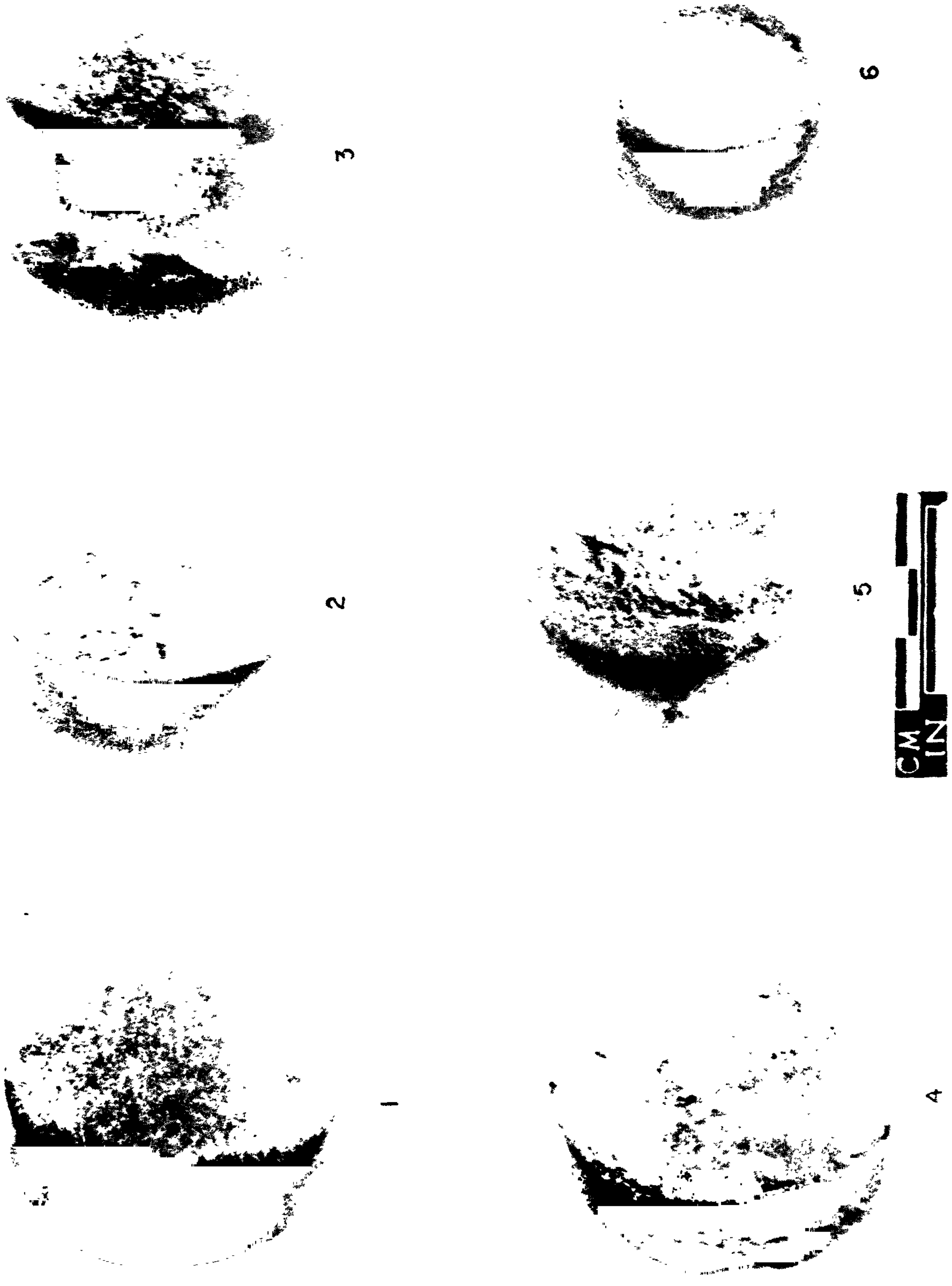
Terracotta cart wheels, hopscotches and spindle whorls. See pp 156 and 158

PLATE L



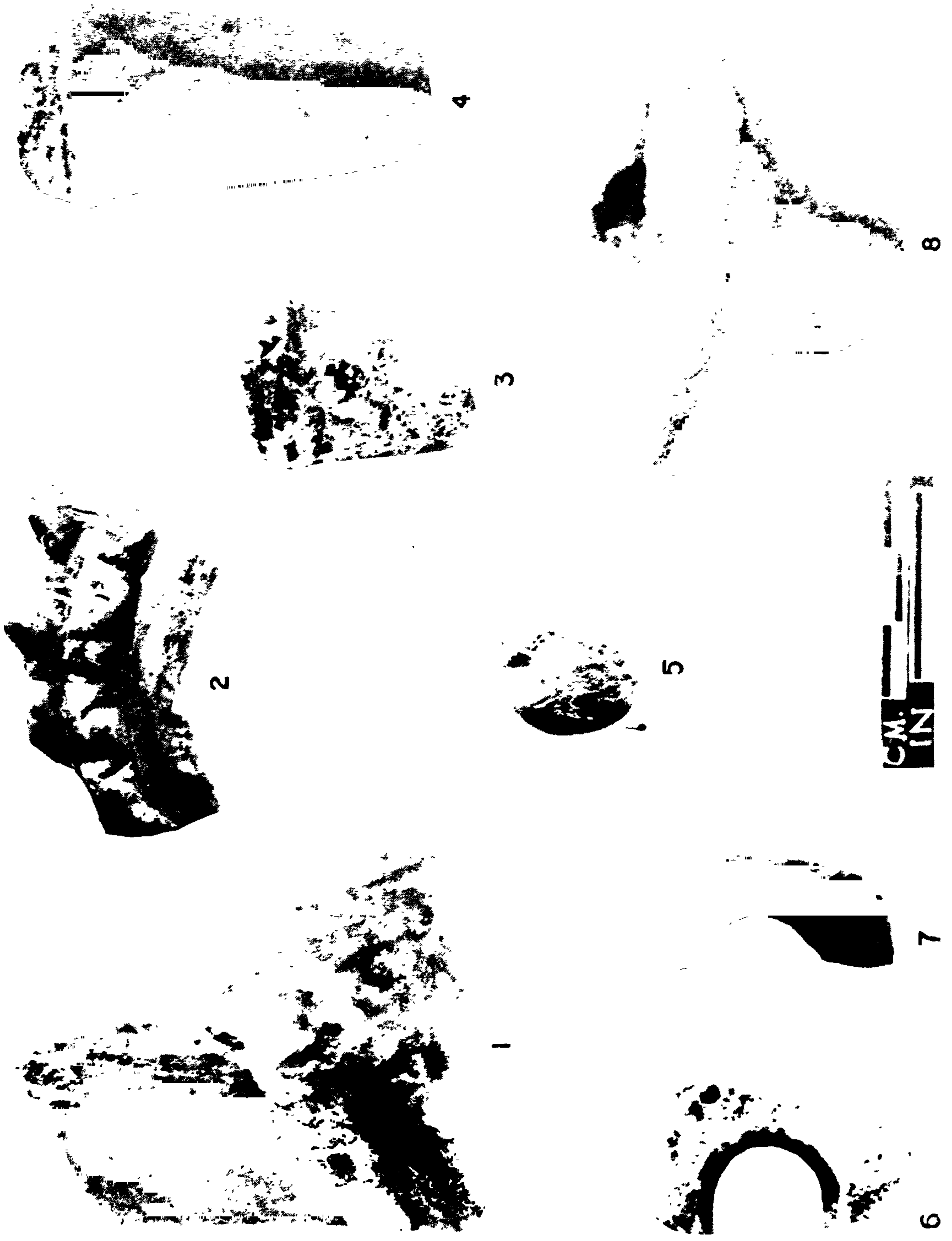
Terracotta votive objects. See p. 116

Terracotta lamps and marbles. *See p. 157*

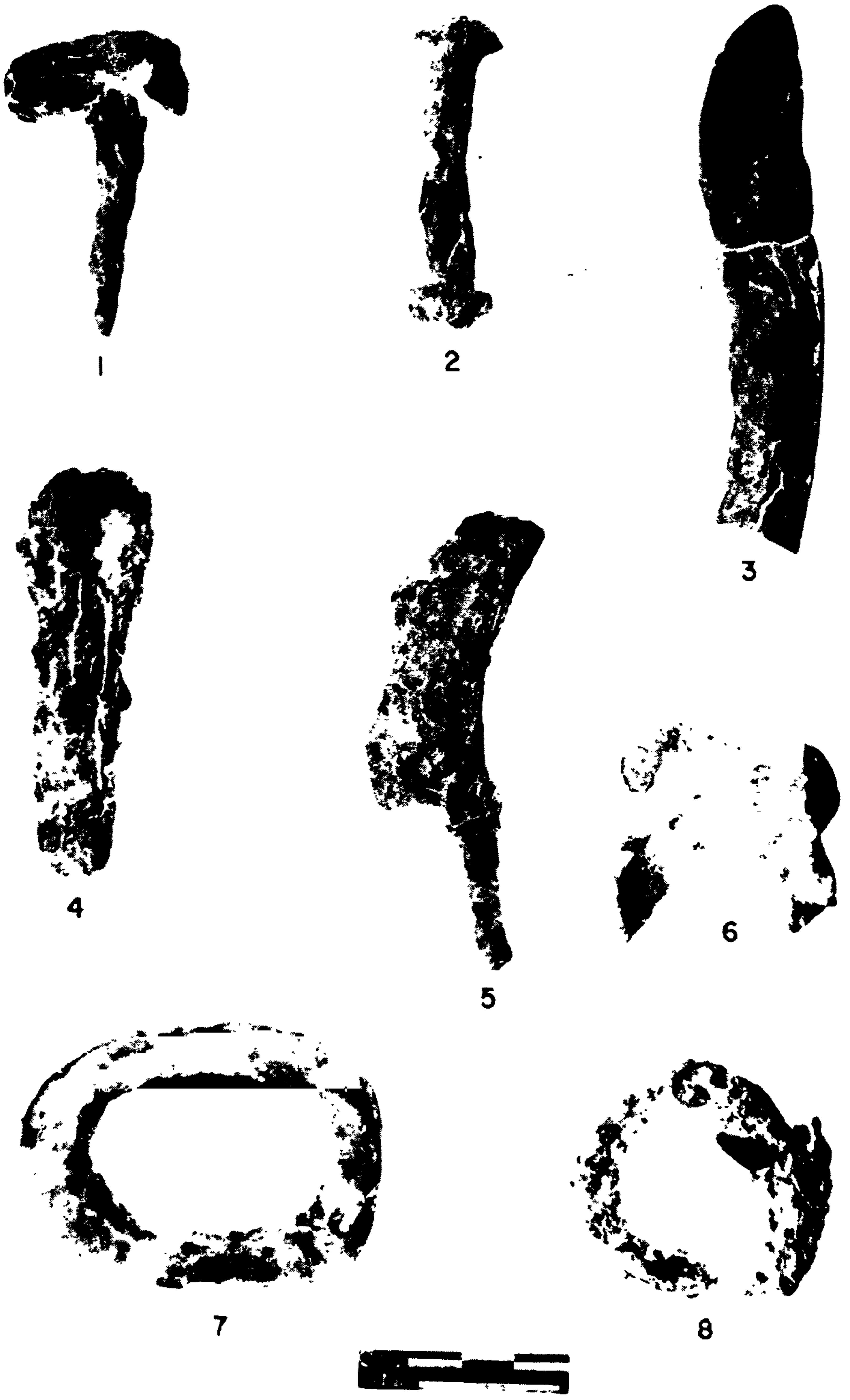


Terracotta ear ornaments. See p. 1[illegible]

Terracotta playthings *See p 158*

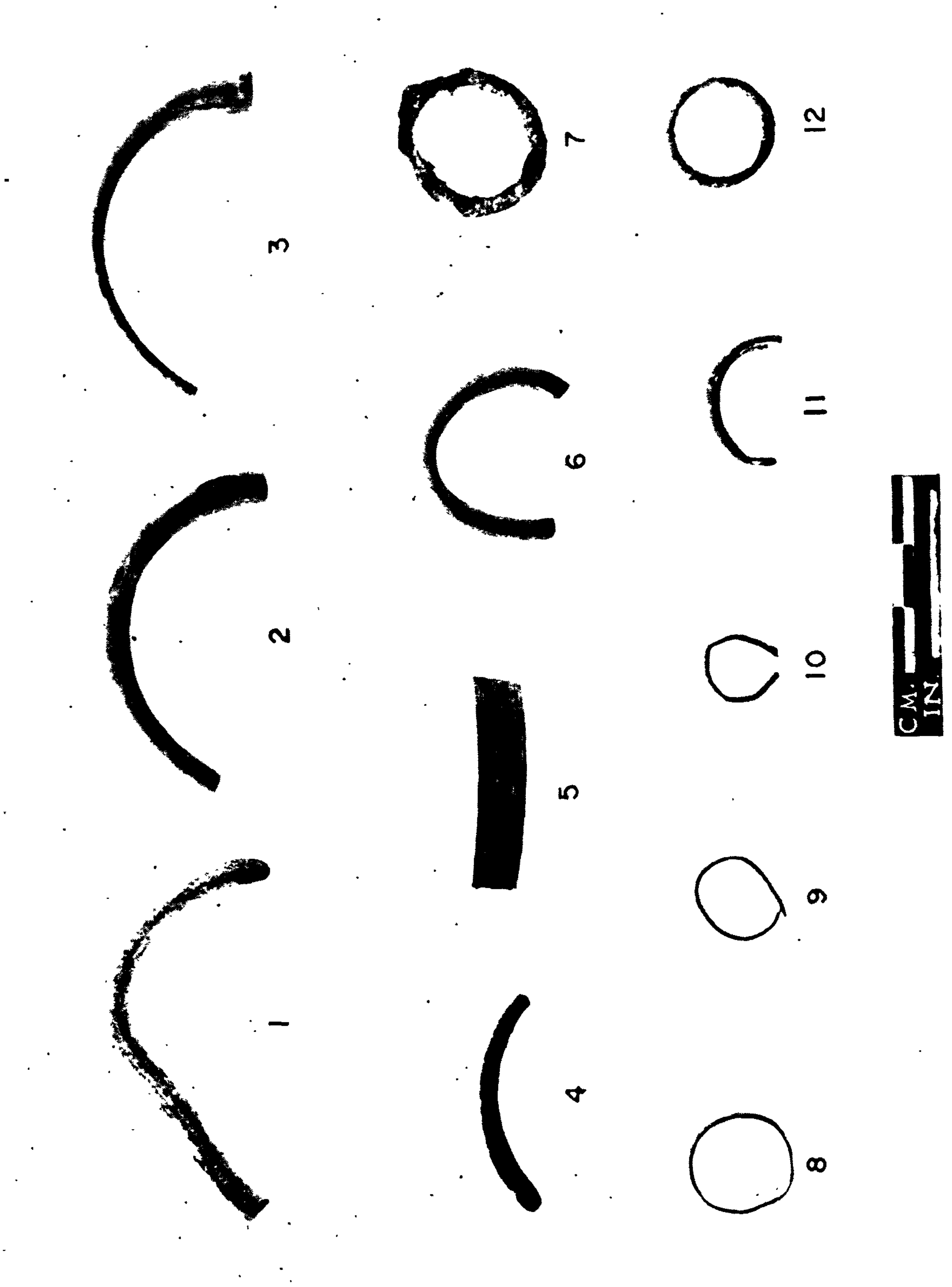


Terracotta miscellaneous objects. See p. 156



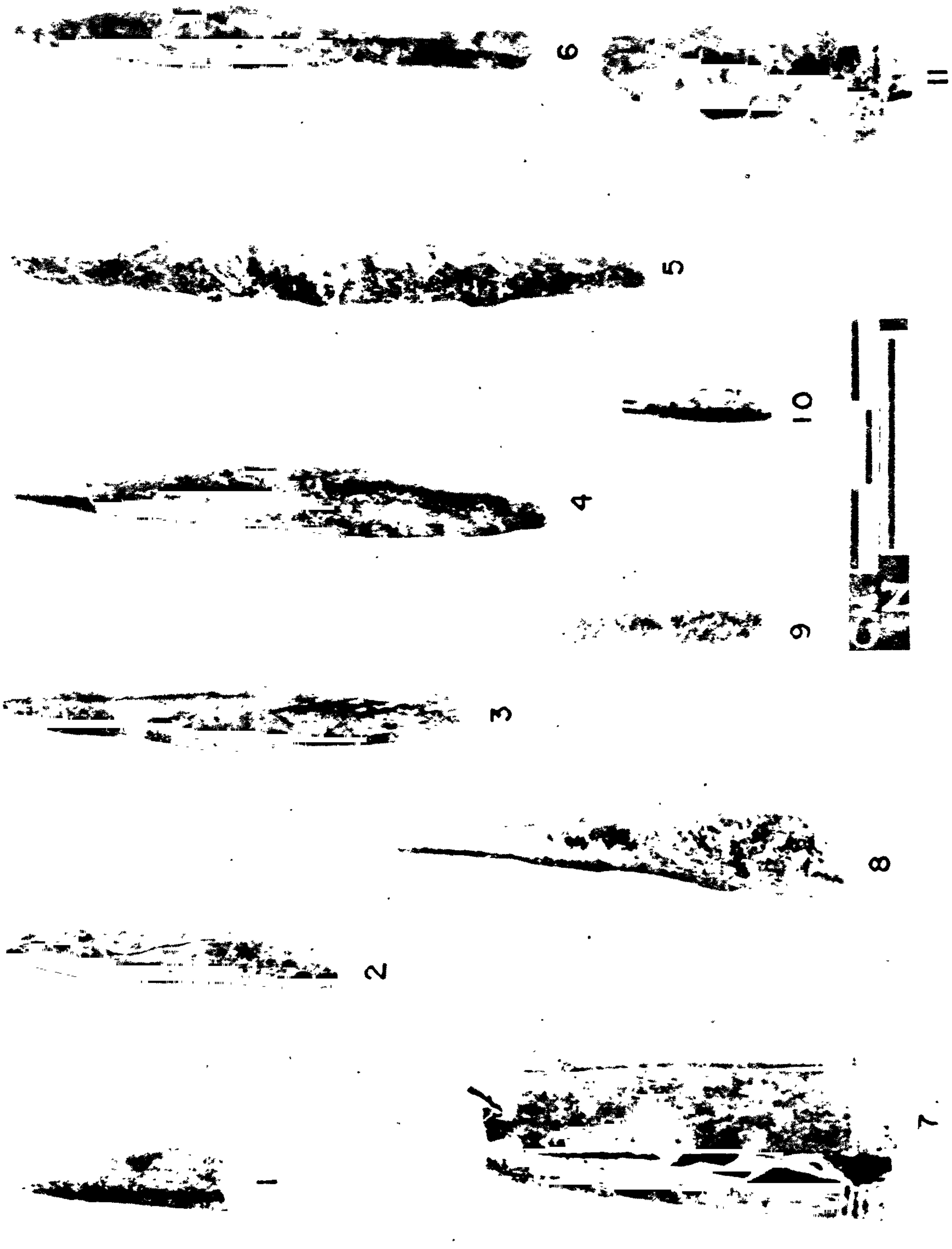
Iron objects. See p. 159

Iron objects. *See p. 159*

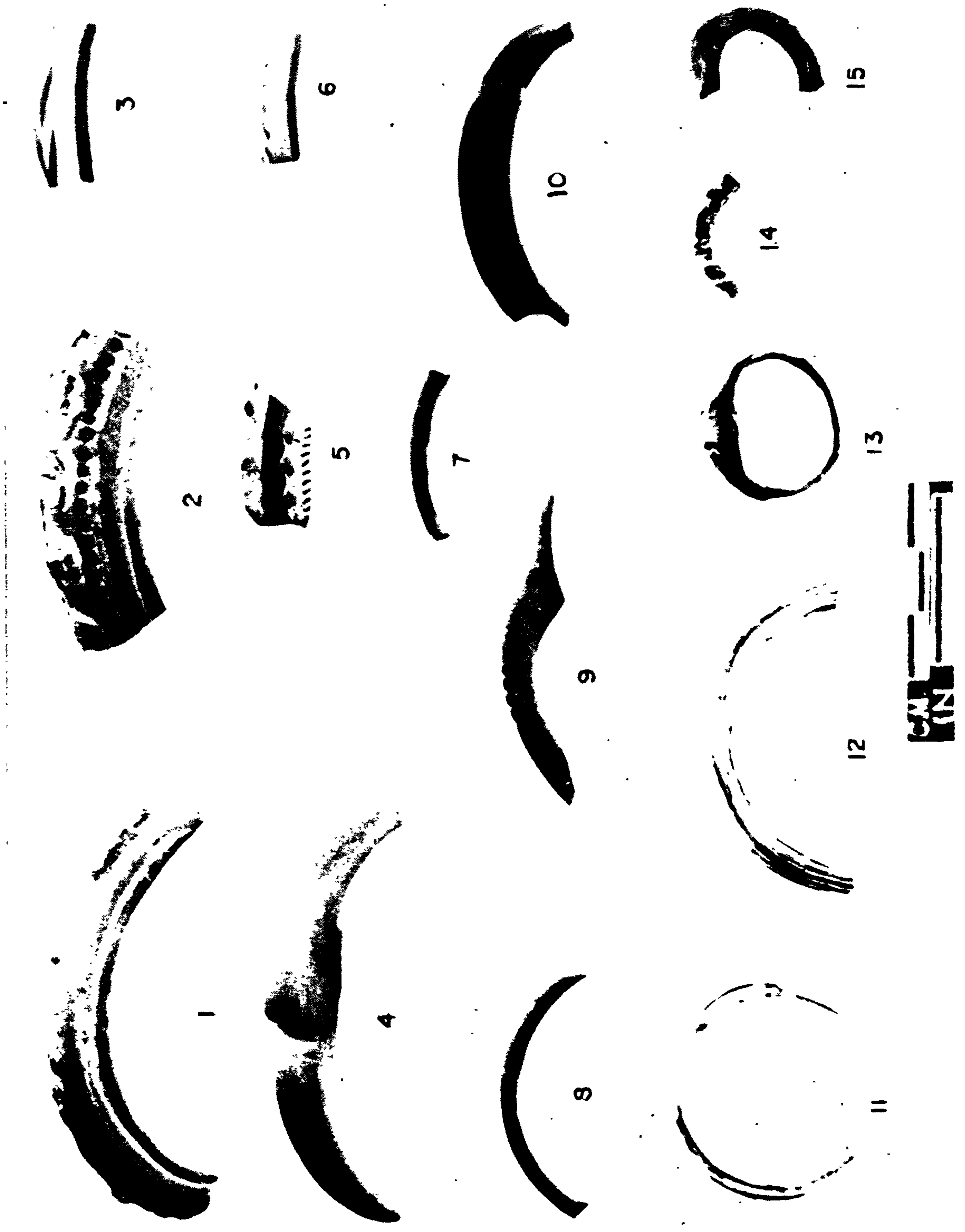


Copper objects. *See p. 163*

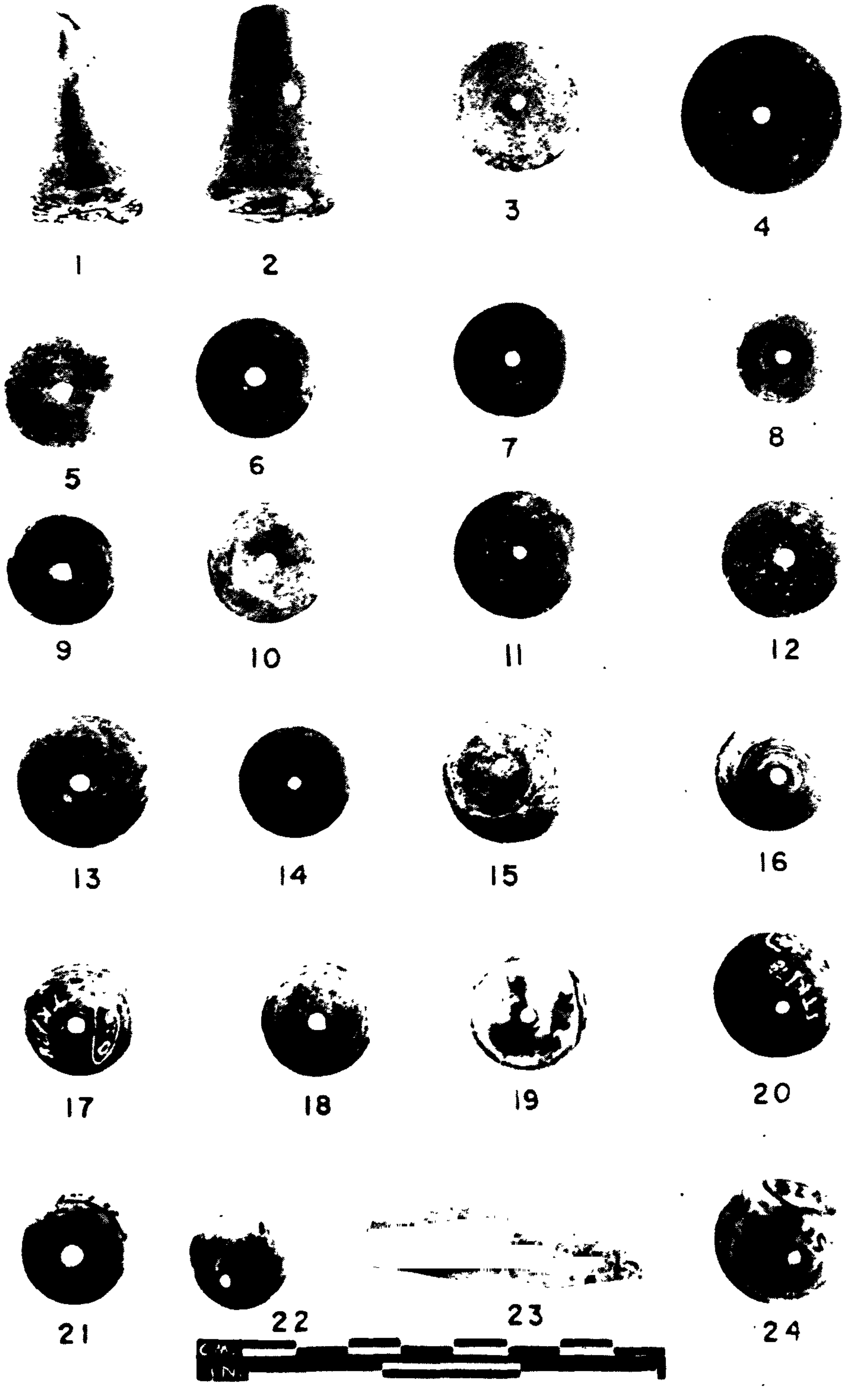
PLATE LVIII



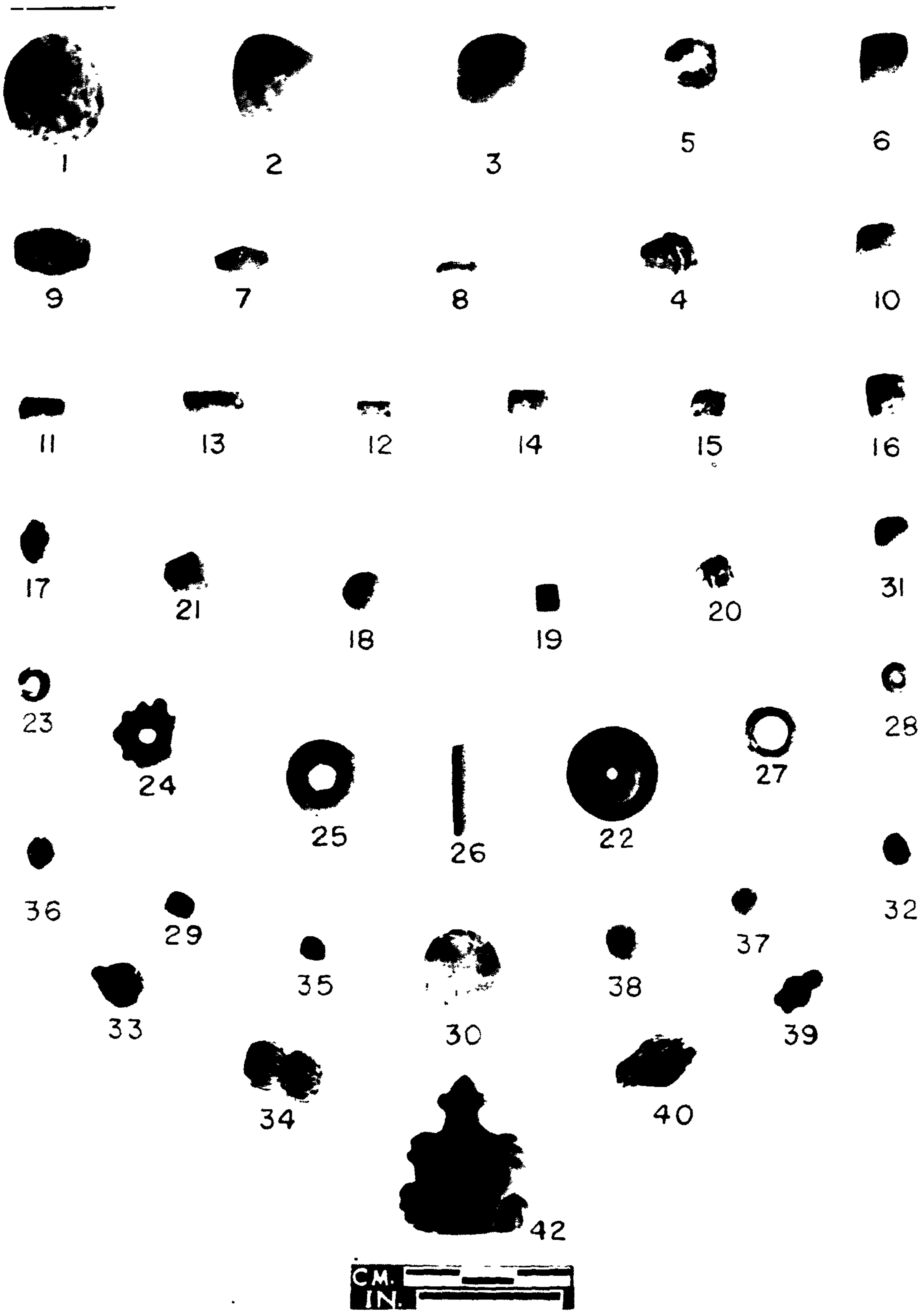
Bone and ivory objects. *See p. 161*



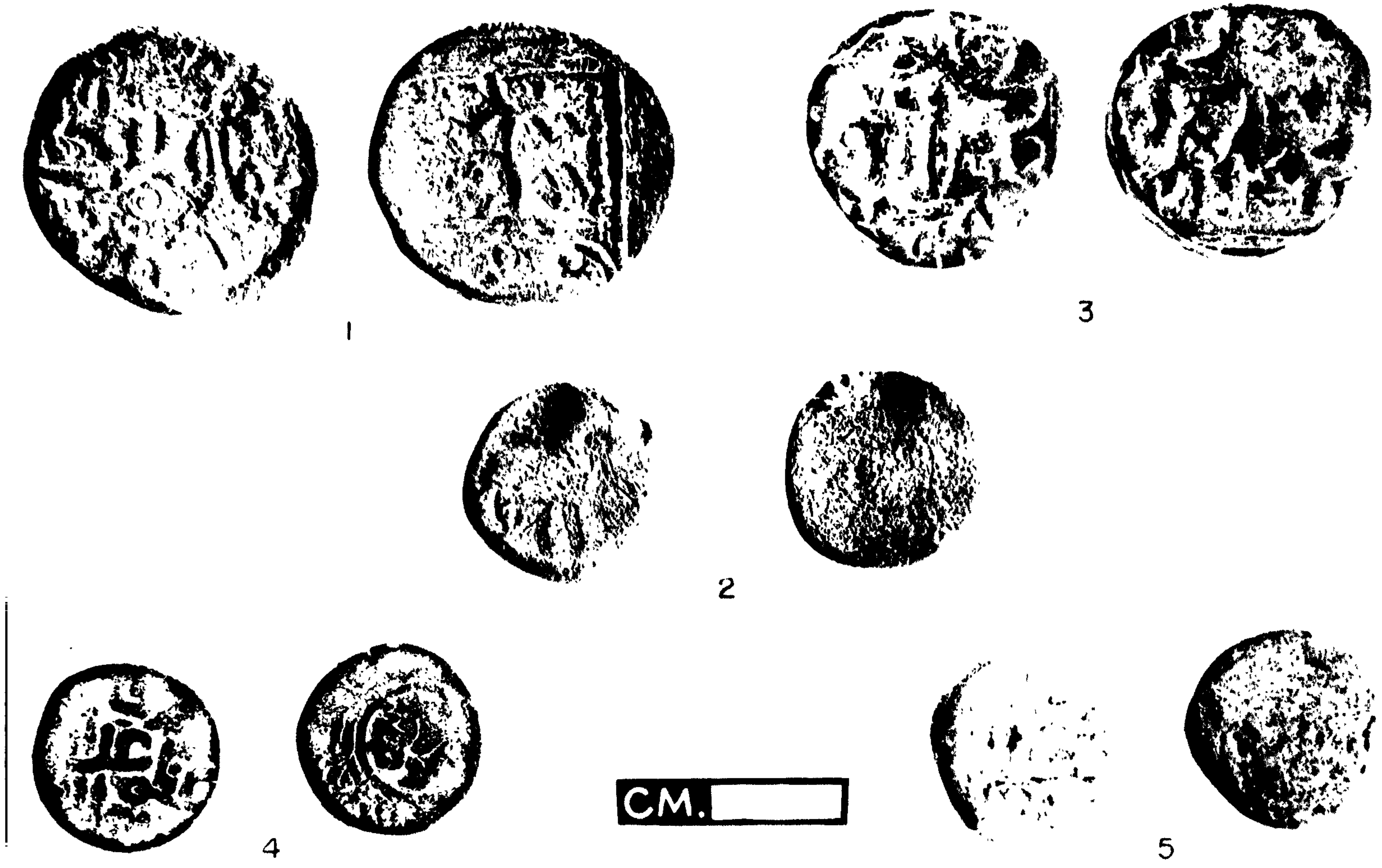
Bangles and rings *See p 160*



Terracotta beads. *See p. 166*



Shell, glass and semi-precious stone beads. See p. 171



Early historical and medieval coins. See pp. 81, 171, 179 and 180

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